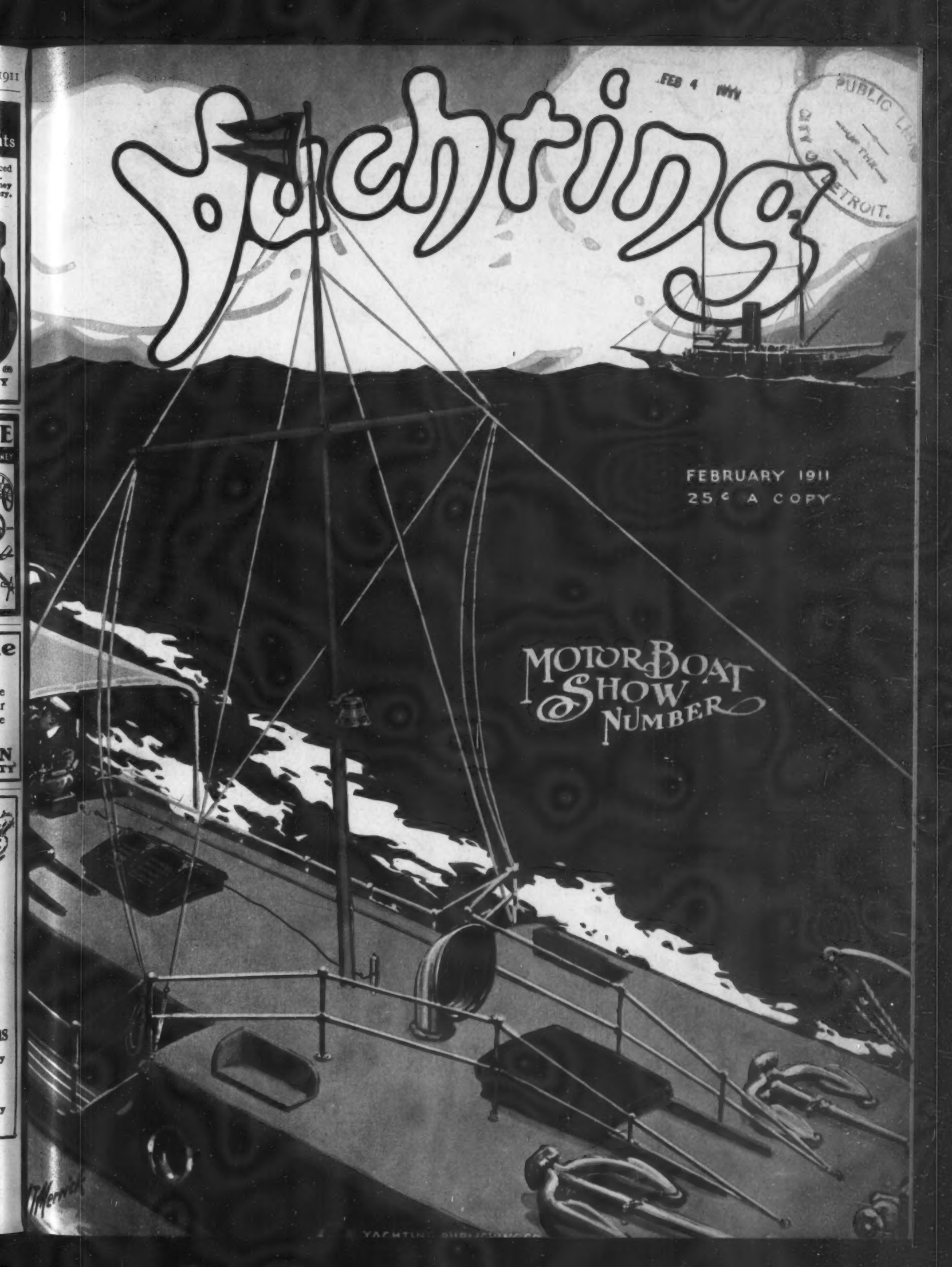
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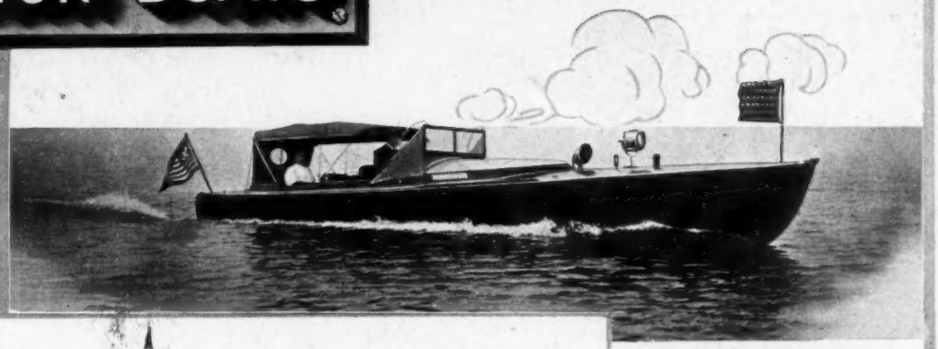

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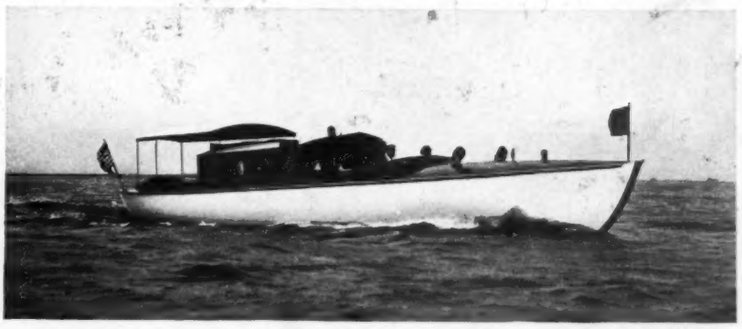

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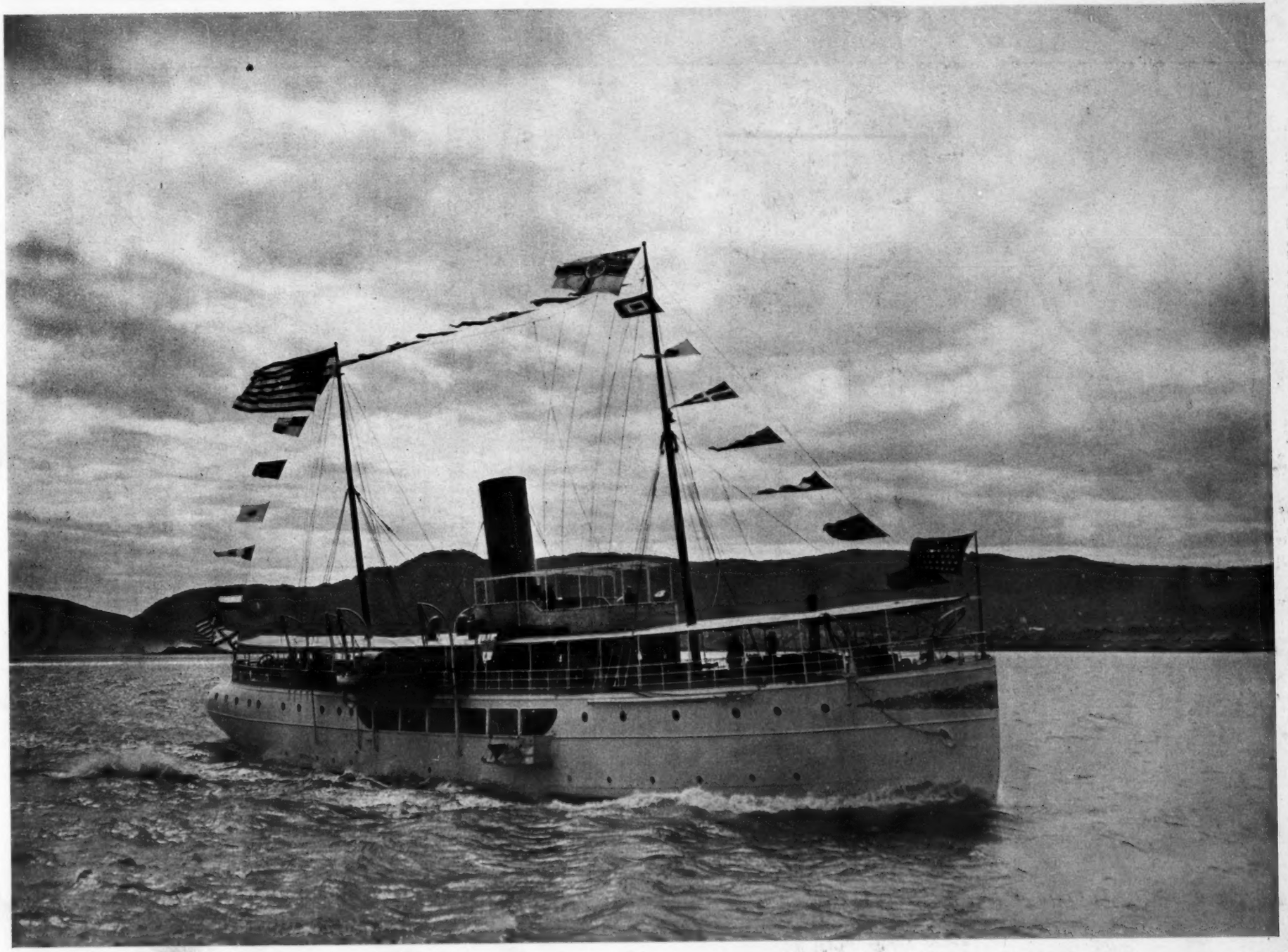

A FRESH BREEZE. PRIVATEER IN HAVERSTRAW BAY.

YACHTING

VOLUME IX NUMBER 2

February, 1911

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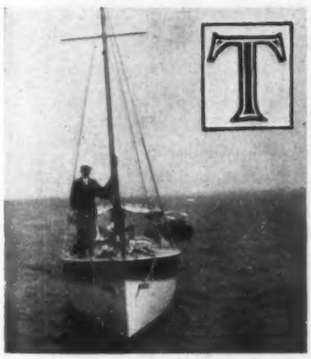
Up the West Coast of Florida

By DR. H. BAER



URSA.

THE month of September is usually considered an unsafe time of the year for cruising on the Gulf of Mexico, owing to the frequent occurrence of West India hurricanes; but with me it was a case of "Hobson's choice"—that month or never—and I decided to take the risk and make the cruise.

We had a full boat's company, consisting of captain, navigator, quartermaster and engineer, the duties of all of these falling to the share of the writer, while, in addition, there was the first mate, second quartermaster, bo'sun, dishwasher and oiler combined in the person of Frank, we two making up the crew. Our ship was the Ursa, and our destination Pensacola. The Ursa is already known to the readers of YACHTING by reason of a cruise which we took in her to Nassau and the Bahamas last year; but for those who may not have read of that cruise it might be well to say that she is a raised-deck cruiser, 42½ feet over all, with a beam of 9 feet, and drawing 4 feet of water. Her power consists of a 3-cylinder, 6 x 8 Standard motor, rated at 18 horsepower and turning 350 revolutions per minute, giving her a sea-going speed of something over 8 knots. She has a gasolene capacity of 180 gallons, giving her a cruising radius without refilling the tanks of about 450 miles.

After the usual round of preparation, everything was finally aboard on August 30, with the Blue Peter flying from the yardarm, and the captain bade good-bye to his family and friends, and at 8:10 a. m. headed down the Manatee River for Palma Sola to take on the first mate with the numerous aliases. This individual had failed to hear the alarm clock go off and, therefore, was not ready; but by 8:58 he and his dunnage was aboard, and we headed out towards the beacons into Tampa Bay.

Crossing the bay, we went out by the Swash Channel leading out by Mullet Key, passing the abandoned North Channel Beacon at ten o'clock. Wind fresh S. E.; squalls making up in the S.W.; thermometer 84 degrees; barometer 30.01. After getting out of the Swash Channel it was necessary to hold well offshore to avoid the shoals making out from Pass-a-Grille, which we passed at 10:30. Just inside of Pass-a-Grille lies Indian Key, a government bird reservation, which is used as a nesting place by untold numbers of pelican and man-of-war hawks, and we succeeded in getting some interesting photographs of these birds.

Leaving Pass-a-Grille, we headed up the coast, drawing gradually nearer to the beach, as deep water here makes in to within 100 yards of shore. The town of Clearwater was to be the end of our first day's run, and we reached the entrance of Little Clearwater Pass at 12:45. The chart and coast pilot both show more water in Little Pass than in Big Pass, but when it comes to entering any pass on the west coast of Florida neither the chart nor the coast pilot are to be relied upon.

We undertook to enter, and immediately got into shallow water. Then we saw a boat come around the point on the south side, so we went over towards her, and again got into shoal water. Then the bo'sun got into the dinghy and rowed over to a fish camp and succeeded in persuading a fisherman to come out and pilot us in. The channel has very little water in it, and, as the tide was about half down when we entered, we bumped several times in going over the shoals. Once inside the pass, the channel is well staked over to the town. After going over to the fish camp to put off the pilot we tied up to the dock and proceeded to get dinner, it being two o'clock, and a late hour for us to dine. The last of August is about the end of the rainy season, but we were still having showers each day, so we were not surprised when it set in for a downpour which lasted until four o'clock. After that the

sun came out, and we started off to see the town. Clearwater is quite a pretty little place, built on a high bluff overlooking St. Joseph's Bay and Clearwater harbor, and, as it is a fashionable winter resort, boasts some good houses. The only thing about Clearwater which is subject to criticism is its name, the water being anything but clear at this season of the year.

Wednesday, August 31. Left Clearwater at 6:35 a. m. We decided to go out by Big Pass, believing that it could not be any worse than the one by which we came in. We found plenty of water in it, and had no trouble passing the red buoy outside. Thermometer at 7:15, 79 degrees, barometer 30.11, sky overcast, wind light S. E, with S. W. swell. We reached the outer buoy at 8:07, going by several sponge fishers lying in Anclote anchorage. Following the directions on the chart, we went on to the mid-channel buoy off the mouth of Anclote River, and started to go over to the river. We immediately got into shoal water, but managed to pick our way across with the lead to a dredged cut. The cut is not shown on the chart, but we went up the river without difficulty, as it is well staked to the Greek side of the town. This part of the river was so congested that it was all we could do to work our way by the sponge boats, and on arriving at the town we found it impossible to get a berth, so decided to go into Tarpon Springs instead. This we started to do, and promptly went aground. The mate got overboard and pushed off, and we went back to the Greek town to get directions. The policeman there kindly offered to pilot us to the Springs, and, I must say, did his job in excellent style, as we never touched once, though we found, to our sorrow, later on, that this stream is very difficult to navigate.

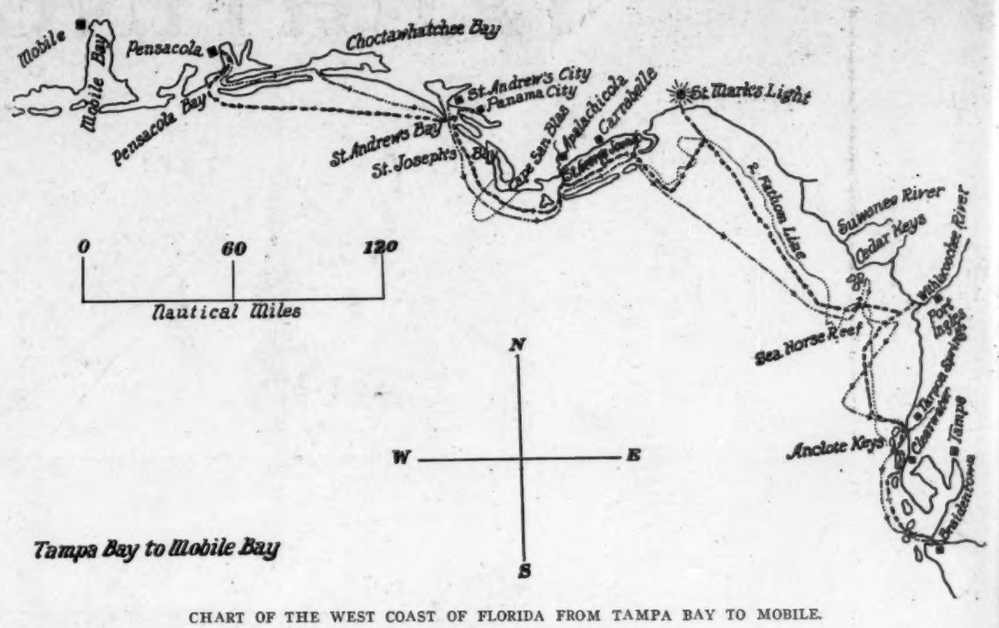


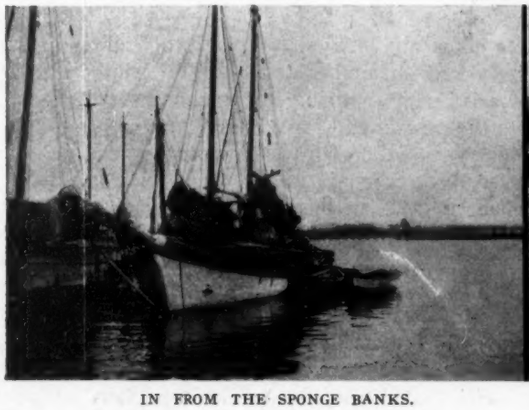
CHART OF THE WEST COAST OF FLORIDA FROM TAMPA BAY TO MOBILE.

The town of Tarpon Springs is the center of the sponge fishing industry of Florida, having wrested the honor from Key West, which was formerly the Mecca of the spongers; but the Florida "conch" could not compete with the swarthy sons of Agamemnon, and the Greek is *the* sponger of to-day. There are about two thousand of them in the town, and they use a type of boat native to the Mediterranean—double-ended, with a single sail, resembling the lateen rig, but using only one spar. These boats are gaudily painted in red, blue and yellow, while the masts are striped like a barber's pole in white and blue, the top of the mast being yellow. On each side of the hull are three equilateral triangles of a brown color, the apex of each being at the scupper and the base at the waterline. The object of these is to prevent the dirty water from discoloring the sides, but they certainly give the craft a strange appearance. A few of the boats are now being adapted to American rigs, but the majority still cling to the rig of their forefathers. There is an oarlock on each quarter, made of the forked branch of a tree, and the inboard end of the oars are weighted, to balance the 18-foot blade.

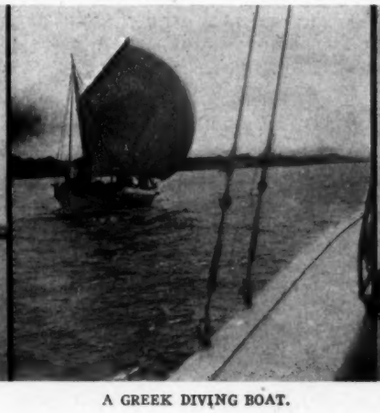
There were a great number of these boats hauled up on the beach undergoing repairs, and it did not take a great stretch of the imagination to see Achilles with his myrmidons hauling out their ships as beneath the lofty walls of Troy. In fact, a boat occupied by a man and a boy passed close to us, going up the river, and the mate exclaimed, "Look out, Palinurus! Look out, Astyanax!" and the captain felt bound to explain to him that he was getting a little mixed on his Virgil and Homer; but he claimed that the Greeks and Trojans were close kin, and the captain could not gainsay him, as he was not strong on genealogy.

We saw such names as Lycurgus, Helenus, Sparta, etc., on the boats, as well as a few American names. Ulysses was there with his ship, but it had a 7½ horsepower gasolene engine under the stern, while Ajax and the son of Tydeus, with many of their old friends, were represented in the crowd.

We went to a bakeshop to get some bread, and an excellent picture of Nestor presented the captain with a flat cake of board-like hardness, which the mate whispered was the kind that Æneas ate to fulfill the prophecy of the harpies that they would be so hungry they would eat their tables. The captain, being very fond of queer-tasting cheese, much to the mate's disgust bought a



IN FROM THE SPONGE BANKS.



A GREEK DIVING BOAT.

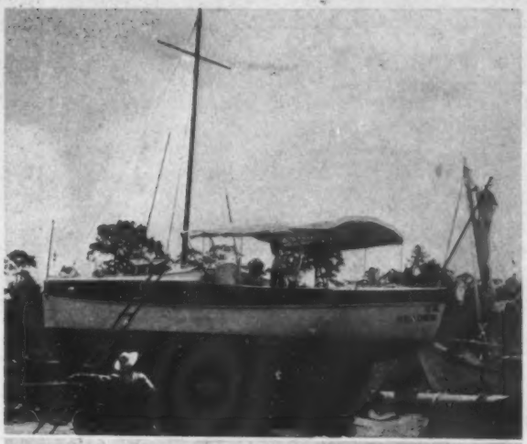
THE SPONGE FLEET, ANCLOTE RIVER.

pound of some Greek cheese that he saw. The mate insisted that it was some of the original cheese made by Polyphemus, and left in his cave and only recently discovered; and the captain, for once, was forced to agree with him.

After sending off the usual number of souvenir postal cards, we went back to Ursa, intending to go down the bay and anchor there over night, in order to make an early start the next morning; but it was a case of counting our chicks before they were hatched, for we had barely started when we ran aground—got off, and hit bottom again; and to continue the account of that run would be, like the story of the locusts that took the corn from Pharaoh's granary in the tale, without end; so I will draw a veil over the half-hour that it took us to go 200 feet.

At the second bend of the river we backed up to swing, and, as the captain threw in the clutch, it stalled the engine. Thinking this strange, he jumped on the engineer, started the motor again and threw in the clutch, only to have the engine stall once more, with a doleful, creaking sound from the clutch, showing that it was slipping. Leaving the clutch in, he took up the starting lever and undertook to turn the engine over. He found it impossible, so decided that either the shoe had been bent and was up against the wheel or that a piece of wood had gotten between the shoe and propeller, preventing the latter from turning over. The crew was ordered overboard to investigate, and soon appeared on the surface of the water, sputtering, and reported nothing wrong with either shoe or propeller; so we were forced to the conclusion that the shaft had become jammed in the stern bearing — an accident that we had not run against before; but this was the only possible explanation of the matter.

We were thankful that this had happened in harbor instead of on the high seas, and we decided to pole down the river to where we remembered seeing some ways on the way up. We had a fair tide and made good progress between the times we were aground, which were frequent, until a kindly-souled individual with a small launch happened along and offered us a tow, which we accepted; and we were thus ignominiously brought to the ways, where we cast anchor. The captain went ashore and interviewed the proprietor of the yard, who told us that he could not take us up until the following day; but he vouchsafed the information that he had a basin in front of the



URSA GOES ON THE WAYS.

THE SPRING AT TARPON SPRINGS.

THE CAPTAIN TAKES A SMOKE.

STERN OF A GREEK DIVING BOAT.

ways with 20 feet of water in it, where we could anchor. We anchored there all right, and spent the rest of the afternoon vainly trying to keep all of the boat in the basin; but, manœuvre as we would, we always had a part of the keel resting on the mud bank. As the mud was soft, however, we gave it up and let her rest on the bank, the tide not going down sufficiently to careen her.

We had a good opportunity here to examine some of the Greek boats that were on the ways. Nearly all of them had gasolene engines from 5 to 10 horsepower, the propellers being enclosed in a cage of brass piping, running from the deadwood to the sternpost, and being further covered with a fine-mesh fish net. The object of this is to prevent any possibility of the air pipe from the pump to the diver getting caught in the propeller, as all sponge fishing is now done by diving.

Thursday, September 1. Hauled out on the ways at 11 a. m. Uncoupled shaft, and had to take out the stern bearing along with it and apply gasolene torches to the babbitt before we could separate the two. The trouble was caused by a piece of steel being in the babbitt that formed the bearing. This had worked loose and jammed the shaft. Rebabbitting and putting back the bearing consumed the rest of that day and the morning of the next. We were back in the water, however, at 1:40 p. m., September 2, leaving the ways at 2:15, and being piloted into the main river by the proprietor of the ways. We got down the river without difficulty, though in going through the dredged cut we touched several times. We went out of Anclote anchorage by the N. W. channel as far as buoy No. 4, which we passed at 3:38, then headed N. by W. ¼ W. to go inside the outer lumps on St. Martin's Reef. We ran until 5:40 p. m., and anchored in two fathoms of water, with grassy bottom and out of sight of land, which was about 13 miles distant. Three spongers came up and anchored within a mile of us, but only one of them took the trouble to put up an anchor light. At 11 o'clock wind went N. E.

Saturday, September 3. Wind S. E., fresh; barometer 30.04; thermometer, 5 a. m., 80 degrees. Up at 4:30 and under way, with no land in sight. Course N. N. W., allowing one-half point for the flood tide. We kept this course for two hours, and at 7:08 changed to N. N. E. to head for Port Inglis Beacon, at the mouth of the Withlacoochie River. The tide sets in and out of all these bays so strongly that the allowance that must be made

YOUNG PELICAN AT U. S. BIRD RESERVATION, TAMPA BAY.

MAN-OF-WAR HAWKS.

YOUNG PELICAN.

for it surprises one. We sighted two tramp steamers in the Port Inglis anchorage and made land on the starboard bow at 7:55 a. m. Passed the Beacon at 9:05, and were very much surprised at the piles of rock lying around in every direction. As the tide was low, they cropped up on all sides. We ran in a couple of miles, and as we saw shoal water ahead, decided it the part of wisdom to wait for a tug that we saw coming in and follow her up. This we did, reaching the docks without mishap at 10:10 a. m. I lay stress on the docks, because that was all there was—docks and nothing more. The phosphate which is shipped from this port is lightered down the river and towed out to the steamers in the anchorage, some 12 miles off shore.

After vainly trying to buy some souvenir postal cards we decided that we had seen all we cared to of this delightful place, and were about to leave when one of the pilots came down and told us what a fine business they were doing here, saying that they had had five vessels in the anchorage during the past month. This decided our going, and we started down stream at once. The tide was up and the rocks covered, which did not make the captain feel any easier as we felt our way along, touching bottom once, though, fortunately, on sand. We breathed a sigh of relief when we got into deep water, and ever since, when the captain eats too much cheese, he dreams about Port Inglis and the rocks in the Withlacoochie River. We headed W. by N. ¾ N. for Cedar Keys entrance buoy, which we reached at 2:40, and anchored off the railroad dock at 3:29 p. m. Cedar Keys is an old town, and, having once seen it, no one would dispute the fact, as its age is everywhere apparent. It boasted the first railroad to this section of Florida, and travelers for Tampa had to change here. But now it is as dead as Hector, or any other object that is very dead indeed.

Sunday, September 4. Barometer 30.07; thermometer, 8 a. m., 85 degrees. Left Cedar Keys at 5:55, and, after reaching No. 3 buoy, steered west across Sea Horse Reef for about two miles, running over some 6-foot lumps, which made the captain feel uncomfortable. At 6:20 changed course to N. W. by N. Sea smooth, light easterly breeze, very hazy.

During the forenoon we passed the mouth of the "Old S'wanee River, far, far away," and, incidentally, the farther you keep away from it the better you will feel, as we found out on our return trip. On account of the hazy condition of the atmosphere objects a few hundred feet away appeared several miles distant, and every few minutes the mate would announce that he saw rocks ahead, which, a few minutes later, would drift by in the shape of water hyacinths. After the haze lifted we could dimly make out the shore line all day long. The tide was flood and kept setting us towards the land, as we could tell by a frequent use of the lead, so that by three o'clock in the afternoon we were steering W. N. W. and still heading for the same point—namely, St. Mark's Lighthouse, which we made at 4 p. m. After we got by the yellow water coming out of the Suwanee River we had the bottom in sight most of the day, being in from 2 to 2½ fathoms some 10 to 15 miles off shore. After sighting St. Mark's Light, we kept on until it bore N. by W., then headed for it, passed by the sea buoy, and anchored in Spanish Hole, abreast of the light, at 5:35 p. m., after a 12-hour run.

Monday, September 5. Up at 4:45 a. m., and rowed into a fish camp to ask the way up the river. They told us it would be useless to attempt it alone, and offered to pilot us if we would tow their skiff, to which proposition we were glad to assent.

St. Marks, or San Marco—the name is uttered with respect, for one feels that he is here treading on historic ground, the mate, even, whispering, "Eternal summer gilds thee yet, But all except thy sun has set"—was the second Spanish settlement in Florida and the capital of the province of West Florida. Here the Spaniards built a fort costing 35,000,000 pesetas. Irving tells a story of Phillip the Second walking along the seashore of Spain and looking towards the western horizon. When his courtiers asked him what he was looking for, he exclaimed, "For the castle of San Marco. It has cost such a sum that it surely must be high enough to be seen from the coast of Spain."

St. Marks was, in a way, responsible for the annexation of Florida by the United States, for it was here that Andrew Jackson hung the two English traders, which act started negotiations between the two countries leading to the purchase of Florida. Not a vestige of the 35,000,000-peseta fort is to be seen, and, as the mate was inclined to become poetic over the sad fate of St. Marks, the captain hurried him back to the boat, loudly bewailing the fact that there were no souvenir postals to be had. So, with our fishermen in tow, we returned to the lighthouse and anchored once more in Spanish Hole. As the wind was S. W. and the next leg of our course was across Ocklockonnee Shoals and around S. W. Cape, we decided to wait until the next morning before starting.

Tuesday, September 6. Thermometer, 6 a. m., 83 degrees; barometer 30.28. As we wished to make an early start, we turned out at 3:10 a. m., had breakfast and the dishes cleared away by 4, and then had to sit down until it was light enough to pick up the buoys going out. We got under way at 5 o'clock, the sun rising at 5:15, and passed the Bar buoy at 5:22, when we set our course S. W. by S. ½ S. for 16½ miles, to make the bell buoy off Southwest Cape Shoals. This we passed at 7:20, running over a 6-foot lump while crossing Ocklockonnee Shoals. We passed the wreck of a Norwegian bark on the shoals about a mile inside the buoy.

After rounding the bell buoy we headed for Duer Channel, the most easterly entrance to St. Joseph's Sound, and headed down the Sound for Carrabelle, which we reached by 10:10 o'clock. Duer Channel has plenty of water in it, but is unmarked, and, as there are bad shoals on either side, with no prominent objects on shore with which to get a range, it is an easy place in which to get tangled up. For that reason it is very little used, but we were in luck and had no trouble. After a short stay at Carrabelle, we left a little after noon by way of Bulkhead Channel for Apalachicola, which we reached at 3:30 p. m., anchoring in the stream off the docks. Apalachicola, in common with all the West Florida

towns, sets forward the claim to being the nearest port to the Panama Canal, a fact which amused us greatly. We saw big maps in Apalachicola showing how much nearer it was to the canal than all towns west of it, while places to the south, which were really several hundred miles nearer, were heedlessly blotted from the face of the earth, their names not even appearing on the map.

Wednesday, September 7. Thermometer, 8 a. m., 90 degrees; barometer 30.32. Up at 5:30, taking on ice, water, and 108 gallons of gasolene, and continuing our cruise to the westward at 8:26. After passing the bell buoy at the mouth of West Pass, we set the course W. ½ N. 10½ miles to cross the shoals off Cape San Blas. We got the San Blas Lighthouse abeam at 11:40, changed our course to N. W. ½ N. for 27 miles, which brought us to the bell buoy off St. Andrew's Bay, which we passed and anchored behind Hurricane Island at 3:30. During the day we passed three schooners, lots of porpoise, and a few flying fish, these latter being the first we had seen in the Gulf of Mexico, as on the route to Key West they are not in evidence.

Thursday, September 8. Thermometer, 7 a. m., 85 degrees; barometer 30.21. The run from St. Andrew's to Pensacola entrance was a long one, as we were a little afraid to try the East Pass to Choctowhatchee Bay, having been told that there was only 4 feet of water on the bar; so we got under way early and passed out by the bell buoy at 5:18, heading N. W. by N. down the shore for Pensacola whistling buoy. We soon got quite a squall out of the northwest, which lasted about two hours, and had plenty of wind, but no rain. Since leaving Cedar Keys we had kept the lilly iron-rigged with 200 feet of rope attached, hoping to harpoon a porpoise; but, though the captain and mate had made several attempts the porpoise always got in ahead. However, just after leaving East Pass, a school of them ran across the bow, and the captain went forward to make another attempt. He struck, and it is doubtful whether he or the porpoise was the most surprised when the line began to run out at a 20-mile clip. The mate stopped the engine, to avoid the risk of the line fouling in the propeller. After half an hour's battle we succeeded in hauling the porpoise on the after-deck and got under way, as we were anxious to make Pensacola before dark. The porpoise was one of the spotted, deep-sea kind, a little over 7 feet long, and weighed about 350 pounds. They cannot be called a "game" animal, as a 50-pound tarpon would put up a much better fight. We took out the liver and about 20 pounds of meat, which we put on the ice, as fresh meat was scarce, throwing overboard the rest.

A JEWFISH CAUGHT ON THE WEST COAST OF FLORIDA.

Squalls soon began to make up in the S. W., and about two o'clock we got a hard one from the N. W., and from then on got a squall every half-hour, most of them with plenty of rain. At 4:30 the engine stopped, and, upon investigation, we found that the nut holding the leather washer on the air valve of the carbureter had dropped off and gone through the engine. We finally got this fixed and proceeded. Darkness caught us before we reached Pensacola entrance, and we went around the point of Santa Rosa, through the Swash Channel, and anchored off the Naval Station at 6:12, after a 13-hour run. For supper we had porpoise chowder, and, later on, we tried the meat in stew, hash, soup and steak, and found it very good eating. We had heard it said that porpoise was like pork, but we could not taste the resemblance. The meat looks like beef, though a few shades darker, and is much more tender.

Friday, September 9. Got up anchor at 6:30 and reached Pensacola after an hour's run. Barometer 30.11; thermometer, 7 a. m., 83 degrees; stormy and cloudy, with frequent wind and rain squalls. The captain was very fond of a certain brand of Turkish cigarette, and having run out of his supply, he judged the worth of all towns along our route by his ability to obtain his favorite brand. Pensacola was the only city that came up to his standard, and he therefore thought it a fine place.

The town has the best harbor on the west coast of Florida, and when we were there it was full of shipping. There had been accounts of a West India hurricane in the Gulf, so we went up to the Weather Bureau to get definite information regarding it. They told us that one was expected to hit the Louisiana coast early the following week, and that we would be likely to meet some rough weather outside, so we decided to go down inside, through Santa Rosa Sound, and come out of East Pass, if we could get a pilot. The mate went out to find one, and finally located a boat called the Swan, running freight to Choctowhatchee, and which would sail in the morning. He told the captain of the Swan that we wished to follow him through, and the latter very kindly agreed to look out for us and warn us of the shoal spots.

Saturday, September 10. Barometer 30.04; thermometer, 6 a. m., 76 degrees; light N. E. breeze. Up at five o'clock, ran out of the dock and waited for the Swan to start. We left behind her at 6:25, following close, and reached East Pass at 2:10 p. m. The trip through Santa Rosa Sound is very pretty, there being not less than 5 feet of water, and, as it is very clear, the shoals can be seen a long way ahead. We anchored off a fish camp near the dock and went in swimming to kill the time. We were up at four o'clock the following morning, Sunday, September 11, and under way at 5:12. We got out of the Pass without trouble—though the range lights do not now mark the channel and must not be followed—and headed on our course for St. Joseph's Bay, 61 miles away. Barometer 30.14; thermometer 77 degrees; wind fresh east with a heavy S. E. swell. The sea kept gradually increasing, and at two o'clock the wind started in to blow hard from the southeast. As we were then in the mouth of St. Andrew's Bay, we ran in and anchored at 2:40 behind Hurricane Island. During the afternoon four fishing smacks came in and anchored close by.

Monday, September 12. Wind and rain squalls all night, and the barometer in the morning was 30.14. We got up at three o'clock, to get an early start, but found a hard east wind and the sea breaking across the bar. Three more smacks had come in during the night for shelter, so we went back to bed for another good nap, as we knew it was useless to go out. At nine o'clock we got up the anchor and ran up the bay to St. Andrew's City, stopping a few minutes at Panama City on the way. We took advantage of the forced rest to take down the exhaust manifold, which had been leaking, and repair it. We then went to the office of the St. Andrew's *Buoy*, the local paper, for the latest news of the hurricane, and found that storm signals were up from Pensacola to the Rio Grande, and that it was expected on the coast the following day.

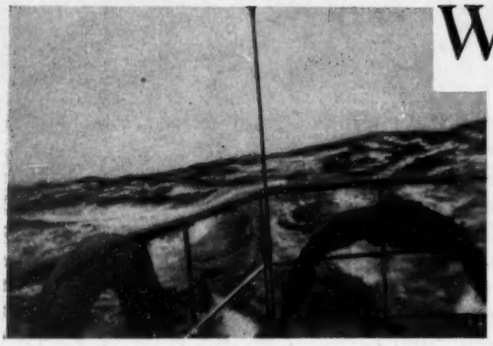
We were up at five o'clock the next day, to find the wind still blowing hard from the northeast. Barometer 30.18; thermometer, 6 a. m., 77 degrees. We ran over to Panama City to put on 200

(Continued on page 156.)

A December Trip to Bermuda in Berneyo

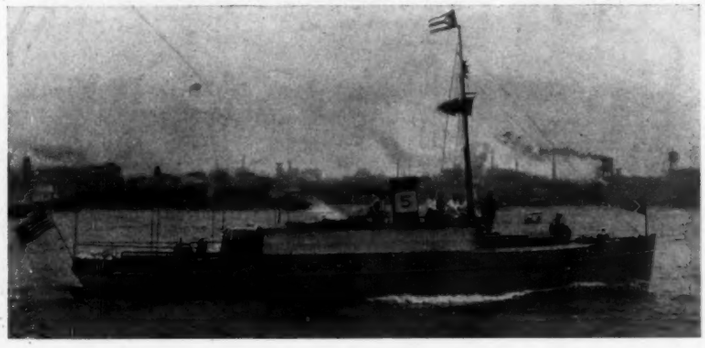
By W. A. SODEN

Photographs by the Author



WHEN it was announced in the daily papers, early last December, that the 60-foot motor boat Berneyo, known to all those who have followed motor boating as the winner of the Philadelphia-Havana race last spring, was to make a December trip to Bermuda, there was much shaking of heads among the shellbacks and dire prophecies as to her fate if she should strike the usual December weather of the North Atlantic. A trip off shore had never before been attempted during the winter months in a power boat of this size, but Mr. Granbery, her owner, felt confident that his craft was equal to the task, and laid his plans accordingly.

Berneyo had been cruising in Chesapeake Bay during the autumn, and she was finally laid up at Cambridge, Md., at which place she was fitted out early in December for the trip, no especial preparations being made for the voyage. The following deep-water crew was picked to take her down: J. B. Welton, captain; G. Campbell, mate; A. Cederberg, chief engineer; W. A. Soden, assistant engineer; J. R. MacDonald and H. Ralyea, quartermasters.



BERNEYO.

This crew left New York on December 9 and arrived at Cambridge late the same evening. The next morning we were taken by Mr. Granbery to the yard where the Berneyo was lying. No one was working on her, nor was there anyone in sight. It was not until we had thoroughly searched the yard that we discovered a little group of workmen huddled around a warm stove in a distant shanty. According to long-established custom, they were loafing during the cold snap, waiting for warmer weather to begin work. It is hardly necessary to note that they did not take our interruption with any great degree of enthusiasm. Their inaction did not appeal to us, however, for we were anxious to have the trip over with, so that we could be at home by Christmas. And so we turned to and began the work ourselves. The result was that, shamed by our good example, and catching some of our enthusiasm, the natives were soon doing their share of the work.

By noon the next day the boat was overboard; but, in backing out from the ways, the mast fouled the sheer legs at the end of the slip, carrying away the topmast and the masthead light with it. As soon as the spar could be fished we proceeded to the gas dock to take in gasolene and stores. An extra half-ton of ballast was added, because of the heavy seas that might be encountered during the trip. This was taken aboard in the form of pigs of lead, each one weighing 125 pounds. It was during the loading of this extra ballast that the second accident occurred. MacDonald, in passing one of these overgrown paper weights through the companionway, dropped it gently on the assistant engineer's right hand, breaking one of his fingers. Time was called while the injury was attended to, and then all hands turned to with a will, and the work was finished in record time.

By 4:15 Friday afternoon everything was shipshape, and a start was made for Norfolk. Half-way down the bay the shaft of the dynamo buckled, putting the electric lights out of commission. All hands turned to in an effort to locate oil lamps. This proved to be a rather difficult undertaking, for such antiquated methods of illumination had never before been used on this modern little craft.

Entering the lower Chesapeake, we got a heavy swell from the southwest, but Berneyo did not seem to mind it, and at 3 a. m. we dropped anchor in Hampton Roads. We waited for daylight before attempting to go up the river to Norfolk, so that it was half-past eight before we were able to tie up at the machine works and take the broken dynamo ashore for repairs.

As we were leaving Cambridge the crew were delighted when an active fox terrier jumped aboard and proceeded to make himself at home. With such a mascot on board, the trip was sure to be a success. Imagine our dismay, then, when, at Norfolk, our devoted mascot jumped ashore and cheerfully deserted. Certain sign of disaster, said the old salts! And there were times before the trip was over when it looked as though they might be right.

There was no chronometer on board, so the captain collected all the watches at hand and took them to a jeweler's to have them rated. By taking their average he hoped to be able to get his longitude offshore. At the Meteorological Bureau the weather man said that we might expect light westerly winds outside.

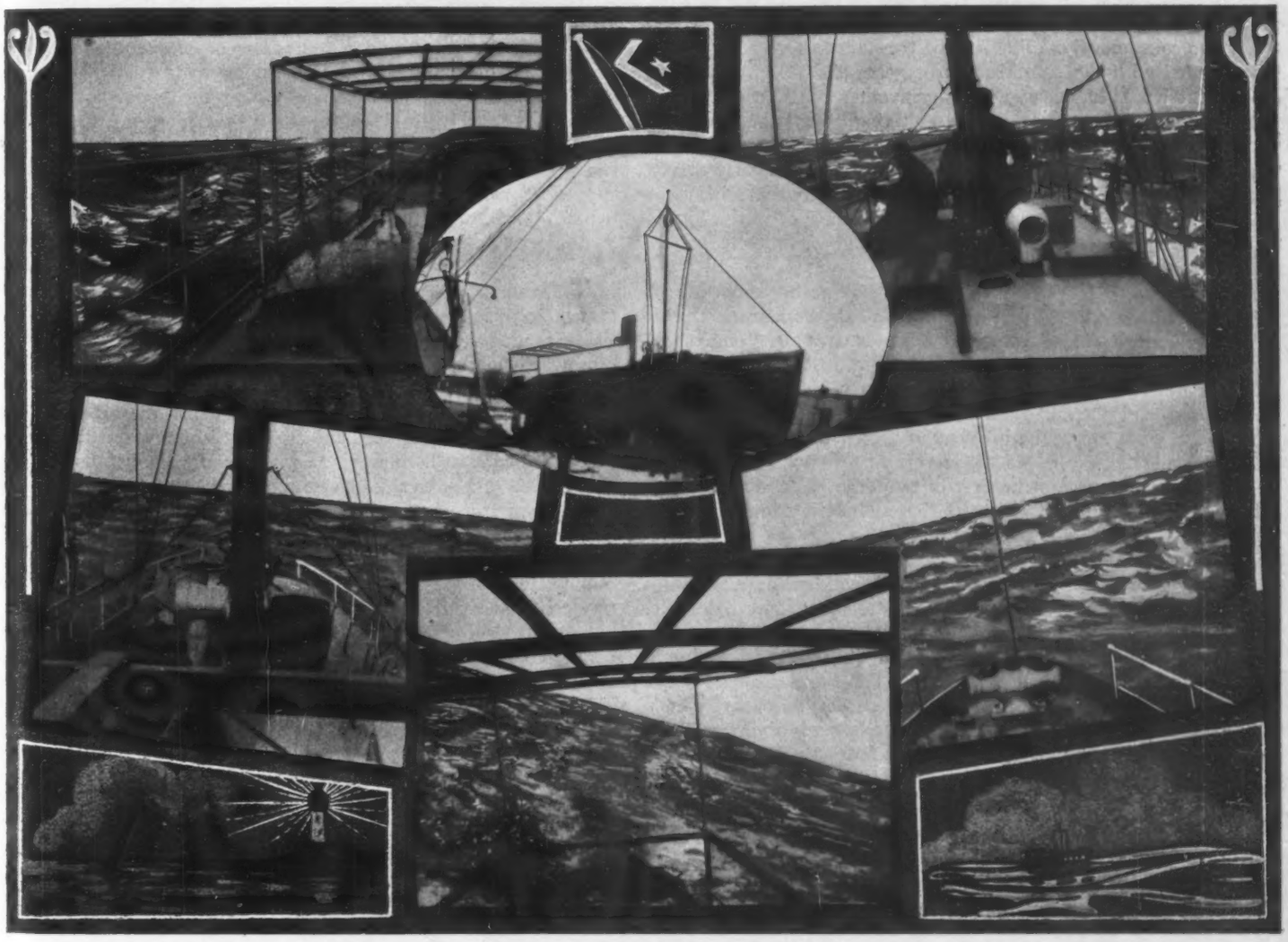
At 3 p. m. the dynamo was returned from the shop and we connected it up. A hasty inspection showed that everything was apparently shipshape, and at half-past four we finally got under way, taking our departure from Cape Henry at 7:18 Friday evening. At this time there was a light easterly wind and a moderate swell outside. We had hardly dropped Cape Henry Light when the dynamo broke down again, leaving us in total darkness. Upon investigation, we found that the new driving pulley had not been properly bolted to the collar, and for the balance of the trip we had to be content with oil lamps. At midnight the wind hauled to the north'rd and freshened up, causing the first case of seasickness, while everything that was not securely fastened took charge. The dinghy was stowed abaft the stack in chocks, and it was necessary to pass preventer lashings to keep her from skidding all over the deck, for in the heavy rolling there was danger that the grips would pull out of the carlins.

The moderate gale continued all Saturday, slowly backing into the northwest with a rising sea. From time to time the engine would race, and, to add to our troubles, the automatic governor which worked from the flywheel to the throttle jumped its collar.

It was impossible to stop the engine at that time to replace it, so the engineer on watch had to keep his hand constantly on the throttle. The instant the little boat raised her stern he shut down on the gas—no mean feat when one considers that the boat was rolling and pitching so that it was almost impossible to keep a footing.

On Sunday morning the wind tacked into the westward and blew a gale. This made a bad cross sea S. W. to N. W., and, despite the constant care of the engineers, the engine raced on the top of every sea. At 8 a. m. the boat was laboring heavily, staggering to the top of the mountainous waves, to dash madly down the steep incline at the speed of Dixie II. Spume, spray and solid water were flying around until, at times, it seemed as if destruction was inevitable. But, as if possessed of human intelligence, the little boat jumped from under each crushing sea as it reared its foaming crest above her to break harmlessly astern. During the morning watch an old roarer, much larger than any sea we had yet encountered, came rushing up on the starboard quarter. Berneyo, with all her quickness, was not able to get away from this fellow, and the wave broke crashing aboard, completely submerging the little craft. The two men at the wheel had seen it coming, and they grasped the rails and hung on. But one of the quartermasters, MacDonald, was not so fortunate. He was just coming up to relieve the wheel when the sea came aboard, and had barely time to close the companion slide before he was swept across the after-house. As luck would have it, he managed to catch the rail as he went over the side. In an instant he had scrambled back on deck, and went to relieve the wheel with as little concern as though being washed overboard was an every-day occurrence.

Down in the engine room we heard a heavy thud as the sea came aboard, and, looking out of the ports, could see nothing but solid green water. When Berneyo recovered herself, we found the windows of the after-cabin smashed in. The lashings which had been placed over the bow of the dinghy had cut down through the two upper planks, destroying our only hope of escape should the Berneyo succumb to the battering of old Neptune. It was only by careful steering that we avoided being pooped continually. The task of steering was as difficult as stoking a liner, and, after a two-hour trick at the wheel, each man was utterly exhausted. As a rule, he was only too glad to drop into a bunk or on the floor "all standing."



SNAPSHOTS TAKEN ON BERNEYO'S DECEMBER TRIP TO BERMUDA.

Monday morning found the weather worse, if this were possible, and at 4 a. m. we decided to try to heave-to. During a lull we managed to get her head to it and slowed down the engine. But after a few hours we found that it was an impossibility for her to stand such a strain. At times she would seem to leap bodily out of the water and come down with a thud that threat-

ened to shake her to pieces; so at eight o'clock we kept her off again and put the engine at full speed. While hove-to the motor stalled, and, in the rush of starting up again, Cederberg, the chief engineer, was thrown against the dynamo, cutting his forehead and eye. Before he could recover himself Berneyo rolled again, throwing him against the vise on the work-bench and laying the back of his head open.

We ran before it all Monday and Monday night, the weather continuing bad. On Tuesday morning the gas and water were measured with the greatest difficulty, and we found that, while we had enough water for three days, there was only sufficient gas for thirty hours' running. The captain was not sure of our position at this time, for he had been unable to get a sight, and the excessive vibration had caused every one of the watches to stop. Everything had been battened down, and both engineers had been on watch continuously. The lack of fresh air in that little engine room, filled with the fumes of burnt gases and oil, produced an effect that would have cast anything invented by the Spanish Inquisition in the shade. It seemed as though our heads were enclosed in iron bands, and every vibration of the engine made each individual nerve in our bodies throb until we were nearly driven crazy. After it was all over the captain told us that our faces had a greenish hue, and that the pupils of our eyes were the size of pinheads. In addition to this, our hearing was affected, there being a constant ringing in our ears.

When it was discovered that the gas and water were so low, all hands held a consultation, and came to the conclusion that it would be better to put out the sea anchor and stop the engine entirely until we got our position. So at 8 a. m. we slowed down and got out the sea anchor. This was an especially hazardous task, for, during the half-hour that it took to get it rigged and secured, every sea swept the boat. But at last we got it over, and when it took the strain and the engine was stopped we all managed to get a little rest—the first in two days. Possibly the two most thankful men on board were the engineers, who now had a chance to get some fresh air into their lungs.

Finding that the boat rode so easily, all hands clamored for something to satisfy the inner man, for we had had nothing warm to eat since Saturday. When we came to investigate the stove, we found the funnel unshipped and the legs gone. But we managed to jack it up on empty oil cans and, luckily, got the pipe in place again. A combination of bad language and kerosene finally started a brisk fire. Then came a consultation of all hands as to what should be the first culinary attempt, and the unanimous vote was for stew. But, alas! we could find no pot large enough to hold a sufficient quantity. Some clever soul finally suggested the dishpan, and, amid the cheers of the assembly, this was brought forth and pressed into service. It took the combined efforts of two men to hold that pan on the stove, and the stew meanwhile kept slopping over the side on everything and everybody. By the time that part of the stew which had kindly consented to remain in the pan was pronounced cooked the galley floor resembled a skating rink. Then came the question as to what we should eat from, for when we went to the dish lockers we found that every piece of china had been smashed in the terrible tossing the little boat had received. We finally trimmed off the edges of the empty vegetable cans and used those.

After dinner the engineers succeeded in getting the governor back in place. Just as the job was finished the cushions on the back of the port settee fell down, and we heard a noise that sounded as though a couple of planks had been started. When the boat rolled to port the air and water seemed rushing in, and on the return roll a strong suction followed. Of course, this discovery did not add to our peace of mind. It is one thing to anticipate trouble, but quite another to find that destruction is sitting by your side. Making water at that rate, we knew it would be impossible to keep her free with the bilge pump, so we broke the connection of the circulating pump at the sea cock and connected to the lower nipple a short piece of rubber hose. At the end of this hose we fastened a strainer made from the wire screen taken from the flour sifter. Much to our surprise, we found that, after twenty minutes of pumping with this improvised pump, we got a suck. Investigation showed us that the "bad leak" was only the water forced up between the skin and the outside planking, due to the heavy rolling. It proved to be the worst scare of the trip, but, until the joke was discovered, we were pretty well on edge. We were miles off shore, out of the course of coastwise travel, in a howling gale, and the dinghy destroyed. It was enough to make the stoutest heart quail. A good laugh broke the tension as we realized how ready we were to imagine the worst.

We were fairly comfortable while she was riding to the sea anchor, and in the afternoon the mate turned chef and made all hands some pancakes and cocoa. The captain and MacDonald stood close by, and as fast as the willing mate flapped his cakes over they stole them. At last, however, the mate rebelled, and swore that he was not going to work over a red-hot stove for a bunch of thieving rascals. At that, the rest of us set upon the two highwaymen and made them return their spoils. Then came supper, at which the principal topic of conversation was the likelihood of our being picked up. At dusk watches were set, each man standing a two-hour trick. By the early morning the sea anchor seemed to have lost its hold, and we were drifting broadside to the sea, rolling heavily. On getting the anchor aboard, we found that the canvas had been torn out of the frame. By this time the gale was moderating, and, later on, the sun came out and the bedding was brought on deck to dry.

We loafed around all that day, as there was nothing we could do, on account of the heavy rolling. During the afternoon we got some heavy rain squalls, and at sunset we hung out our anchor light in lieu of distress signals, for we had none of the latter aboard. Watches were set once more, all hands but the man on watch turning in.

The captain had the first watch, and, as he was about to call his relief, he sighted a steamer's light bearing about southeast, and immediately all was confusion aboard. The men below tumbled on deck, and word was passed down to start the engine; but, of course, we couldn't start up until the circulating pump had been connected, the work being rushed through with all speed.

In the meantime, the mate had fastened some waste on a broom handle, soaked it in kerosene, and made a torch, which he waved madly at the steamer. Fortunately, she saw our flare, altered her course, and started down for us. As she swung around toward us we finished our repairs in the engine room, got the sea anchor in, put up our running lights, and started full speed ahead. This sudden change of front proved to be too much for the steamer's captain, for he put about and started away full tilt, no doubt believing he had narrowly escaped a holdup by a modern Captain Kidd.

All hands voiced their disappointment when they saw their only chance deserting them in this determined fashion; but we kept the little boat at it and soon found, to our relief and amazement, that we were overhauling our near-rescuer. A half-hour's running put us alongside.

"What the hell do you want?" was the courteous answer to our hail. This rather took us aback; but, as we all managed to find our breaths and voices at the same time, it didn't help our standing with the steamer's people. They probably believed that a crowd of lunatics had escaped from their keepers and had commandeered a boat.

We finally made them understand that we only wanted to know the correct time and the shortest way to Bermuda. The stranger gave us our course and distance to Gibbs Hill as N. ½ E., 36 miles. We never learned the name of this Norwegian tramp, but to us she seemed grander than any trans-Atlantic flyer. And

should her captain ever chance to read this record of our eventful run, we extend to him our heartfelt and sincerest thanks for his brusque courtesy that stormy night.

Immediately upon the receipt of the necessary information the two vessels separated, and we laid our course N. E., to take us clear of the reefs. It was then 10:30, and, although somewhat retarded by a heavy head sea, midnight brought the flashing light of Gibbs Hill into view four points on the port bow, and we hauled up to N. N. E.

All hands were feeling jubilant and very hungry; so, forgetting our relative positions, the mate and one of the engineers volunteered to provide a midnight supper. The menu consisted of ham and eggs *a la galley floor,* and cocoa as it might have been. This may not sound particularly appetizing, but the six hard-worked men on that little boat left nothing for a second table. At 2:30 a. m. we made St. David's Head Light, and at six o'clock had our pilot on board. It was an exhausted but thankful crew that responded to the salutes of the shipping as Berneyo proceeded up the harbor to St. George, where we tied up at the wharf at half-past seven, ending the roughest and most strenuous trip ever undertaken by a motor boat. Headed by our owner, Mr. Granbery, the populace turned out to bid us welcome to their city.

Up to this time none of us had had an opportunity to wash, shave or change his clothes, so it can be readily imagined on what a handsome, sunny group these cordial Bermudians gazed with wondering eyes. Mr. Granbery, to celebrate our safe arrival, hurried us to the nearest hotel and gave us the freedom of the bar. I think I may feel safe in adding that at that particular time we appreciated this more than we would have the keys of the city. Too much cannot be said of the fine time accorded us by Mr. Granbery and the people of St. George, our only complaint being that there was more to do than could be accomplished in a working day, and we had to stay up all night to complete the round of pleasure mapped out for us by our generous hosts.

Saturday came all too soon, and, with it, the long and beautiful stage ride to Hamilton, where we boarded the Bermudian. Here occurred the first desertion from our devoted little band. The chief engineer, enticed, perhaps, by the charms of Bermuda, or the pleadings of the owner, or influenced by the need for treatment of a badly damaged optic, decided to remain with the Berneyo.

The Month in Yachting

IT will be remembered that when announcement of the building of the new Plant racing schooner was made I put forth a question which became rather an absorbing one with all who were interested in the promised racing of fore-and-afters of the 90-foot class next season—to wit: who would the skipper be? I am now able to satisfy curiosity on this score. Capt. Dennis, of Elmina, will turn the wheel of the new flyer. As I get it, Mr. Brewster, owner of Elmina, will not put his great schooner in commission next season, and has loaned Dennis to Mr. Plant. Why Elmina will not be in commission I cannot say; knowing Mr. Brewster's sportsmanlike qualities, however, I am quite certain she will not remain out because her owner feels she would have no chance against Westward and the Plant boat. Perhaps she would not; but, at the same time, if Elmina can be beaten when the winds are snoring and the seas are piling up no boat has yet proved it. Dennis will get a whole lot out of his new charge; of that there is no doubt. He will be a worthy rival of Charles Barr, of Westward, and the manœuvres of the two will be worth seeing. Elmina has sailed many notable races in the past, and few will forget the exhibition of racing she gave last summer in the race for the Astor Cup, when she swung around a three-reach triangle with the speed of a torpedo boat. One day last season I asked Cary Smith, designer of Elmina, if he could build a boat to beat her. He said he would not mind trying, but then went on to speak of the immense advantage possessed by the Herreshoffs, with a plant of their own and unlimited opportunities for experimentation. There are many, however, who do not believe that Smith has lost any of his cunning. Here's hoping that he gets the chance, following the revival of interest in big schooner racing which must follow the races of Queen, Westward and the new Plant boat next year, which, by the way, it is rumored will be named Eastward.

Here's what Brooklyn *Life* has to say about the election of Crescent Athletic Club members as officers of the Atlantic Yacht Club:

"The Atlantic appears to have kidnapped a considerable number of Crescent men of nautical prestige for use as officers, including the commodore of the Crescent fleet, F. M. Wilson, who is to be used this year as rear-commodore; Walter H. Sykes, who is to be put to work as chairman of the house committee, and C. B. Ludwig, who, for the past year, has been compelled to work without wages as chairman of the membership committee. Charles J. McDermott was present at the dinner, and the club of which he is president may be considered deuced lucky to get him back safe and sound. As for S. E. Vernon, Edgar F. Luckenbach and Charles A. Morse, they may as well be given up as lost—stranded at Sea Gate, never again to return to their old Kentucky home at Owl's Head."

All's quiet along Gravesend to-night! What! Still, when you think how Larchmont has been kidnapping the Atlantic Y. C.'s officers the past year or two you can hardly censure the Sea Gate organization for pursuing the same tactics. The Horse Shoe Harbor crowd pulled an ace when they got Leonard Richards, and now H. E. Boucher has gone away from Gravesend to be chairman of the Larchmont Regatta Committee. He will relieve Charles P. Tower, the ablest manager of racing events that we have in this country. While congratulating Mr. Boucher upon this new tribute to his ability, I do say that he will have a very high standard to meet. Of course, he will meet it; I have the highest respect for Mr. Boucher's ability. All I want to do is to say something nice about Charley Tower, because he deserves it.

My friend Capt. Arthur H. Clark, who is a gentleman and a sailor in every inch of his six feet and more of stature, author of the "History of Yachting," has published the book upon which he has been engaged for several years past, "The Clipper Ship Era." Capt. Clark is one of the few surviving skippers of a day when the American ensign was known in every port of the seven seas and when every blue ribbon that existed flew from the truck of the Yankee clipper ships. Consequently, no man is so well qualified as Captain Clark to write of that brave era. Beginning with an account of American shipping at the close of the War of 1812 (of course, the writer's personal experiences do not go as far back as that), Capt. Clark follows his narrative down through the years, noting the tremendous increase in our shipping until we were supreme—the days of the "roaring forties," when the ships of the world followed, perforce, in the wake of our proud merchantmen. Our decline is next marked and the reasons deduced. It is, in all, a book rich in anecdote, and precise in its facts, dates and names. Few, if any, books have ever attempted such a comprehensive and, at the same time analytical account, of our most glorious maritime period; and any man who thrills to the breath of salt air, who loves tales of the big, brave things of the deep, and, above all, who has patriotic pride in our past glory, cannot afford to neglect this book. Some day, perhaps, Capt. Clark will write another book—a book about himself. It will be worth the reading, for his life,

from the time he set out from Boston as a youth until he retired with his well-earned honors, is a romance that should not be lost. Capt. Clark is now the manager of the Lloyds office in New York City, and a very efficient one, and also a very enthusiastic member of the New York Yacht Club.

One time when out in China it was necessary for the steam frigate Colorado to proceed to another port on the China Sea with all possible dispatch. Capt. Clark, then in that country—in Shanghai, I think—was recommended to the American admiral as the one man to pilot the frigate through a difficult passage or short cut. Clark accepted the commission. Early on a Sunday morning while the admiral looked out of his cabin windows he saw great rocks hardly five feet away; looking out the other side he saw more rocks. Rushing to the deck, he said: "See here, Capt. Clark, you know we're not insured?"

"Yes," was the quiet reply, "but you have dem' rich owners."

The admiral went below and the Colorado arrived without a scratch.

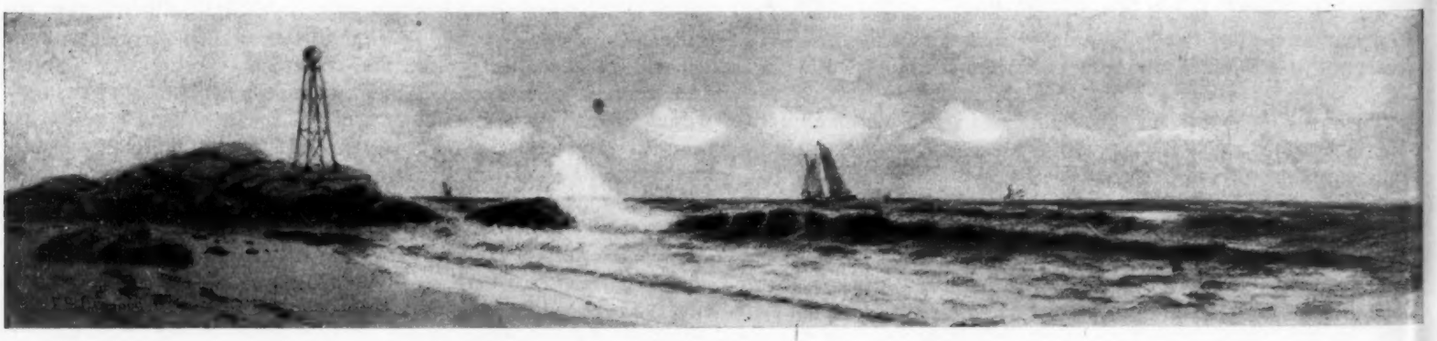
The biggest project and the most helpful, from the standpoint of sportsmanship, ever put forward on the Great Lakes is that involving the offering of a cup for international competition as a sort of substitute for the Canada's Cup, a trophy whose significance both for Americans and Canadians has been seriously impaired by the snarling and litigation which have arisen in regard to it in the past year. The Chicago Yacht Club is sponsor for the idea which contemplates the offering of a trophy similar to the Canada's Cup, now held by the Rochester Yacht Club. The substitute trophy would be known as the International Trophy, and would be placed in the hands of the Yacht Racing Union of the Great Lakes. If the squabble over the older trophy is settled the Chicago Yacht Club plan may be withdrawn. This does not mean, as at first glance might appear, that the Chicago Club has made a bluff merely to expedite the settlement of the controversy now waging between the Rochester and Canadian yachtsmen at Toronto. That is not the case at all. If the deadlock continues, it is certainly due an organization of the standing and importance of the Lake Michigan club to credit it with an undeviating intention to carry out its design. Such a cup coming from Chicago would be peculiarly appropriate, as the Canada's Cup was first donated by a Chicagoan in 1897, and the prize was won by the sailors from the north in a series of races held off Chicago.

It has been a nasty and unsportsmanlike fracas, and, in the opinion of many Americans and Canadians, the best thing that can be done with the prize is to sink it in Lake Ontario and proceed to make history with the Chicago Yacht Club's proposed trophy. It is said that Commodore S. L. Richardson, of the Toronto Club, has offered to donate a cup to take the place of the disputed prize. Since the Rochester Club holds the old cup, though, it would seem more fitting for the substitute cup to come from the American side of the Lakes.

At the winter meeting of the Motor Boat Club of America in the Automobile Club of America's club-house, the annual race to Bermuda was discussed, and it was generally agreed that something must be done to boom ocean racing. It was finally decided that a committee of well-known motor boat men might devise some plan of inducing more yachtsmen to enter the long-distance thresh than has been the case in the past, and such a committee was appointed. From the make-up of this committee it would seem that these men should be able to enlist a record-breaking entry list for the annual race. Five or six entrants would establish such a record. So far as I can see, the discomfort attendant upon such a race is the chief deterrent. The fact is, that the average owner of a power boat of a size eligible for the Bermuda race balks at a race or cruise that deprives him of his comfort and pleasure while afloat. Preach as we may, it is hard to rouse them from their apathy. Probably the luxury-loving age in which we live has sapped the spirit and hardiness of all except those who are born with a strong solution of salt in their veins. The Bermuda race for power boats will be managed by the Motor Boat Club of America this year, and I hope that their committee has better luck in getting entries than was the case last season. There should be enough time between the Havana Race and the jaunt to Bermuda to allow the participants in the former to enter the latter comfortably and rested.

The race next season for the British International Trophy was also discussed at this meeting, and it was impressed upon members that, if they hope to keep the prize here another year, they must start in at once on their preparations. I have heard reports, speaking of the race for the British trophy, that several prominent motor-boat men are going to plunge into the matter of defenders this year. That would be fine. We will need them, for it is not likely that the next British challenger will again break down when the victory is won.

A few days before last month's issue of YACHTING went to press came word of Mr. Maxwell's death. Thus is the sport of sailing yachts in this country deprived of one of its most stalwart, picturesque and sportsmanlike figures, for Mr. Maxwell was a man who loved not only to win cups, but to win them himself. On the Queen you had as much chance of seeing a professional at the stick, or rather the wheel, in a race as you had of seeing a Baptist parson at the masthead of the Eclipse. At times Harry Maxwell, the son, would race the champion fore-and-after, but most of the time it was the elder Maxwell. So true is this that men who race or follow yacht racing will recall no figure more typical of a New York Yacht Club regatta than the tall figure of J. Rogers Maxwell, the patch of white hair showing beneath his yachting cap, the smooth-shaven face, weather-beaten and tanned, on the quarter deck of his swift schooner. It was a figure that will be missed, even though Queen will go, for some seasons to come, as a strong contender for blue-ribbon honors—not, however, under the shamrock burgee, which always snapped in the salt wind wherever a racing boat of Mr. Maxwell's contended. With the sale last fall of the sloop Avenger, the disposal some time before that of Mr. Maxwell's one-design, 30-footer, and the recent sale of Queen, there remains of the former Maxwell fleet nothing but the steam yacht Celt, which, with the schooner Irolita, which came into Mr. Maxwell's possession when Queen was sold, will probably be disposed of as parts of the estate.



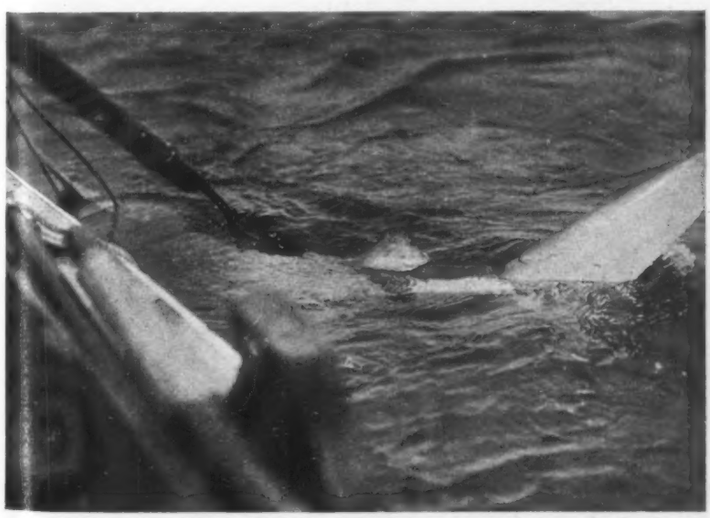
Harpooning Sharks on the Great South Bay

By EUGENE LENTILHON

CHAMPION, ON A HUNT FOR SHARKS

HO, ye yachtsmen! ye of the rocking-chair fleet; ye disciples of Izaak Walton, who have fished the trout streams of New England, who have landed the wonderful tarpon off the coast of Florida, the jewfish at Catalina Island, or the sporty salmon in Newfoundland, gather around and listen to an account of a strange sport, to excel in which requires that one be a good sailorman, good fisherman, and good shot, with plenty of nerve to harpoon and land the mighty sand shark of the Great South Bay! And, think of it, all this can be had within 40 miles of your cosy club corner and jib cocktails in New York! Here is a sport that calls for the best there is in a man; for this, like any other hunting of big game, be it on land or water, has considerable danger attached thereto. But, after the season has passed, think of the fun sitting around the open hearth, with the embers glowing, while the wind whistles outside and the thermometer hovers near the zero mark, recalling the hits and the misses! It brings to mind the old-time mollies of the whaling fleet.

One fine evening in August the telephone rang, and, upon picking up the receiver, someone said: "Hello! is that you, Bill?" "Yes," went the answer like a flash, for the voice was recognized, and I knew it meant an invitation to go shark-hunting the next day. "Well," said Tom, "the barometer is high; there are no clouds in the sky, and as the tide runs ebb all to-morrow morning, what do you say to a day in the old Champion looking for sharks?" "You're on." "All right; be at the house at 7:30 in the morning. I'll look out for the grub." So I turned in early, dreaming of the number I would harpoon to-morrow to make up for those that got away from me the last time.



A MISS WITH THE LANCE.

My neighbor lived four miles away, at West Islip, and I found him stowing away his last poached egg as I broke into the dining-room, a little ahead of time, with a cheery "Good-morning, Tom! My, but you're a good guesser; what an ideal day to go after them!"

No time is lost in going down to the dock, where old Jess is waiting for us in a broad, half-decked, 13-foot rowing sharpie, to take us aboard the Champion, an old Penny Bridge sandbag style of sloop, built at Bridgeport twenty-odd years ago, and once the champion of her class, until her rig was cut down and she was

LETTING HER HAVE IT.

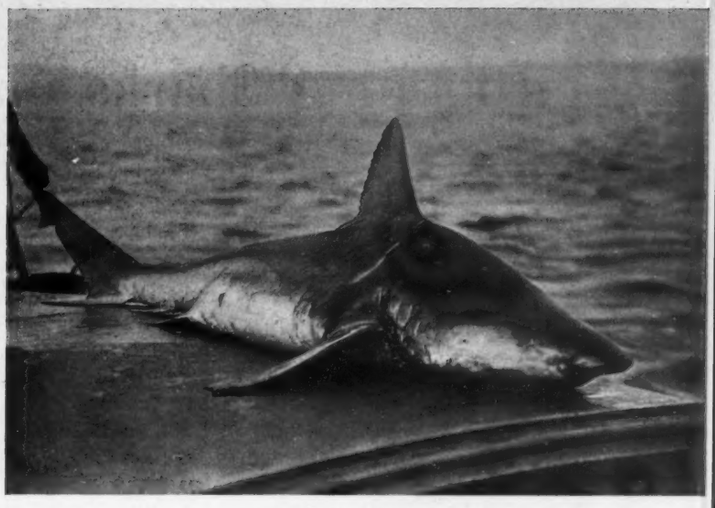
fitted up as a fisherman. She only drew 20 inches of water, for a shoal-draft boat is necessary to cut corners and coast up, down and over the sand bars in trailing the wily shark.

The wind being light, we put on full sail and hoist Jess aloft in a bo'sun's chair, where he sits complacently all day, except for the time taken at noon for a hasty bite of grub. Now, bear in mind, the conditions must be just right for this sport—a clear sky, only enough wind to handle the boat easily, as at times we have to jibe several times in a minute, the water not too rough, and clear enough to enable you to distinguish the shark, as often you see him 150 yards ahead, moving slowly in from 3 to 6 feet of water.

There is no "pulpit" on the bowsprit, such as the Down-Easters use for sword fishing; but you must stand on the bowsprit, holding the forestay with the left hand and in the right the harpoon, to which is attached about thirty fathoms of half-inch rope coiled in an old butter tub, to which the end is fastened. A double outfit should always be provided, as Mr. Shark often breaks a harpoon or bites the line in two before receiving his death blow from the lance.

Well, we're off, towing the sharpie astern, and Jess, from aloft, engaging us in a running vernacular peculiar to his type, announcing that he can smell 'em, that it is going to be a good day, and

HAULING HER ABOARD, SHOWING WHERE SHE GOT IT.



AN 8-FOOT SHARK.

that we had better run over along Great Flat. We follow this advice, but there is nothing to be smelled; so we cross the Jumping Bar, get into the channel and make for a bight in Farmer's Shoal, about half a mile to the north of Fire Island Light. Then the fun begins. Tom gives me the helm and goes forward on the horn, overlooking the gear on his way, as it is easy to get a turn of the line around your leg and get pulled overboard once your game is struck.

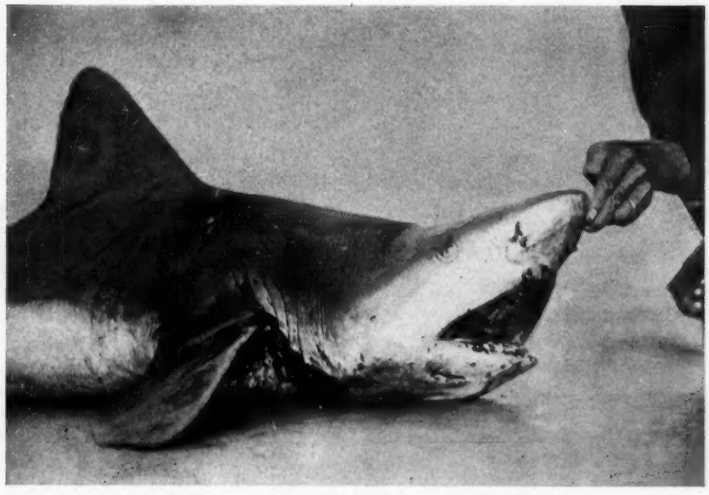
"There he is!" sings out Jess at last—they are always "he's" to Jess, although not one bull shark in fifty is caught. "Keep her off, off, off; jibe her; steady; put her about, quick—I said quick; hold her on the wind; off, off; there he is right ahead of you; luff, luff; steady; give it to him!" Swish goes the harpoon. The right foot of the harpooner, which has been resting on the starboard bowsprit stay, is brought quickly inboard as Tom jumps for the butter tub, the line of which is paying out like a quick-burning fuse. As its end is reached it is followed by the tub, which Tom quickly throws overboard. My, doesn't Mr. Shark go, towing the tub under at times! Everybody is a-quiver to know if he will pull the dart out in his first mad rush. Jess is quickly lowered, and he and I jump into the sharpie as soon as the Champion is brought up into the wind near the tub, Tom taking the helm. The prey has gone into a pocket of deep water and sounded. Whether or not you are the one who harpooned him, once you are in the sharpie you are all afire inside and your blood is running riotously through your veins. Yet, to all outward appearances, you are calm as you grab the lance. Jess grabs the bucket and cautiously takes hold of the line, pulling it in, ever so slowly, until he has got enough to play the fish with. Then there is a sudden tug, a lurch of the skiff as she is spun around, first one way, then another. Jess pays out the line slowly through his leather-like hands, and we are off at a five-knot gait for 50 yards or more. Then the shark sounds again. "He's an ugly cuss," says Jess. "Look out he don't dump you over for a wash when he gets near the boat." Finally, we get him almost near enough, and I try the lance, and stick him back of the dorsal fin—not a vulnerable spot. The f a t a i spot is just in front of this fin. The shark throws his tail in the air, covers us with spray, and dives, striking the boat with his tail in doing so.

"I told you he was a ugly one," says Jess; "I can feel 'ems!" In the meantime, the animal spirit—the brute of your prehistoric ancestors in you—is coming to the fore; you are thirsting for the blood of that shark. It is a fight to the death. He suddenly rises and grabs the gunwale of the boat in his powerful jaws. We drop in the bottom of the sharpie to lower the center of gravity, and Jess says, "Let him have it! Give it to him—right over me; I'll keep down!" Up I jump, grabbing the lance, and strike with the aim and force of a toreador facing the charge of a bull. The vital spot is touched at last. The shark lets go, sinks, and it is all over. It took just seventeen minutes from the time he was harpooned.

He is brought to the surface, towed to the Champion, tail end first, hauled up on the quarter, and your nerves relax, while you take a few deep breaths to prepare yourself for the next one. We measure him, and find "she" is 6 feet 11½ inches long and weighs 180 pounds.

"Well, ye's got him," says Jess. We certainly did; and got one more before grub. Then we tried the flats around Clam Pond; but the tide was too low, although we saw seven and missed them all, the cast being too far. We tried Champions Creek Sluiceway on our way home, and reached the dock at half-past five, tired out.

The record catch for one day is seventeen; the average is three. The largest shark that has been caught was a bull, 9 feet 2 inches long, weighing 300 pounds. After death, the white skin of the belly changes to pink, then to red and purple in wonderful shades. Shark steak, or the meat cut from behind the dorsal fin, has a delicate flavor, but is decidedly coarse. However, we took some home with us, and, as we left, Jess's parting words were: "So long; you'se weren't shooting very good to-day." And so we parted, hoping for another try at the game before the season closed. July, August and September are the best months of the year for shark fishing, and when conditions are right one could not ask for better sport.



"SHE" AND THE LEATHER-LIKE HANDS.

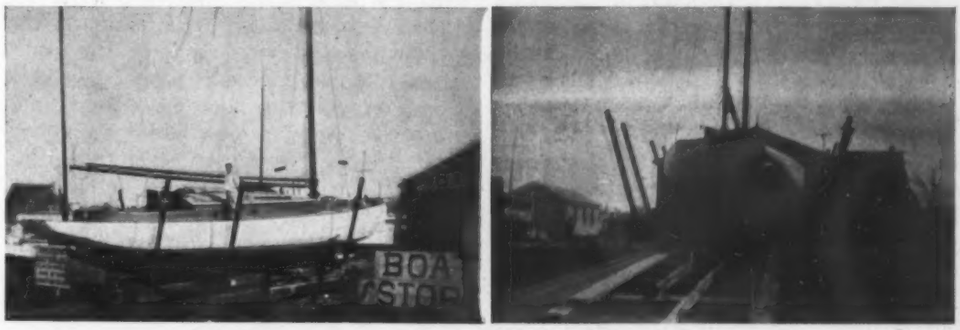
Southward Under Power and Sail by the Inside Route

PART I—FROM ROCKAWAY TO THE HEAD OF CHESAPEAKE BAY

By A. M. FARRELL

OWNING a boat at Rockaway Beach, Long Island, and living in New Orleans, is apt to cause one a great deal of planning as to how to get her South, especially if she is too large to be shipped by rail or water. This was the predicament in which I found myself some months ago, and the problem was only solved when two of my friends volunteered to help me bring her down on her own bottom. After screwing up sufficient courage and collecting a mass of information concerning the inside route, we left home on March 19, by steamer for New York. When we arrived no time was lost in finding the Alga, which was on the ways at Rockaway Beach, stripped of all her spars and running gear. This fact caused us several days' delay in rigging her, putting her bottom in shape to make the long trip South, and getting her overboard.

The Alga was an auxiliary yawl, 42 ft. 9 in. long over all, 30 ft. on the waterline, 12 ft. 6 in. beam, with a draft of 3 ft. She was equipped with a Palmer 2-cylinder gasolene engine as auxiliary power. The crew, besides myself, consisted of P. L. Langmesser, familiarly called "Lang," and H. L. Avegno, who will be known throughout this narrative as "Pic," a nickname by which he went.



ALGA, ON THE WAYS AT ROCKAWAY BEACH.

Leaving Rockaway Beach at daylight on April 2, we started on our long trip, and at sunrise we were well under way. Reaching Coney Island in a short time, we found ourselves on the broad Atlantic, which was very calm, and, as there was not a bit of breeze in sight, we had to start the engine. We reached the Raritan River about noon, the engine working like a clock. The day was a fine one, but very cold, and it being our first day out, with everything going well, we were all naturally in good humor. Pic and Lang began shining brass, cleaning up the decks and putting everything in shipshape order. Continuing down the river under power, we tied up for the first time at nightfall, and Lang began to cook the evening meal, while Pic and I coiled down the halyards and put the covers on the sails. In a short time Lang called us, and we certainly did justice to the spread. After we had finished dinner we set the anchor light and talked about the long trip that was ahead of us until we became sleepy and turned in.

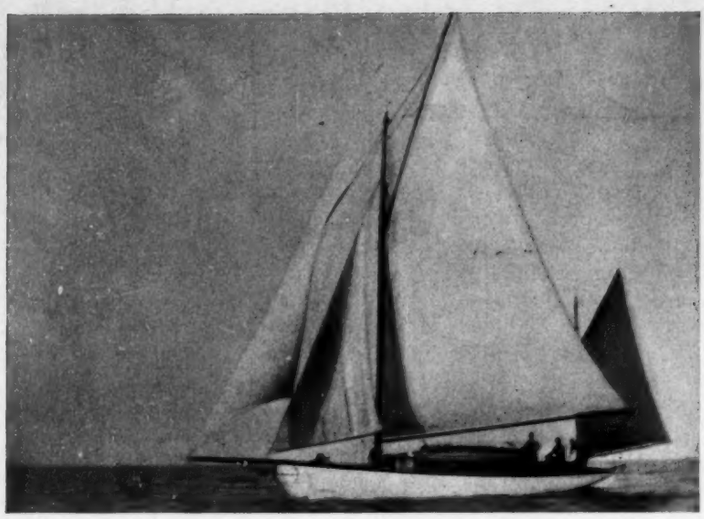
The next morning we were up at daybreak and made another start before partaking of breakfast. After traveling some five or six miles our engine stopped, on account of trouble with our carbureter; but, as Lang was a good mechanician, it was not long before we were under way again. We were constantly having trouble with our engine that day, as it would run for several miles and then balk. Our engineer, seeing the trouble was with the carbureter, which was an old one, said we would have to get a new one before the trip was over. About dark, as we were finishing with the Raritan River, and just before we reached the first lock of the Raritan Canal, we went aground outside of the channel. It was quite a job to get off, though we finally succeeded in doing so. We had intended tying up at the lock for the night, but the keeper informed us that, unless we passed through that night (which was Saturday), we would have to wait until Monday morning, as the locks were not open on Sunday. So, poleing to the lock, we managed to get through and locked up the 12 feet before dark. The next lock was only two miles further on, and, from the information given us by the keeper, we concluded it was best to make the second lock before midnight.

Starting our engine, we went but a short distance before our carbureter was "on the blink" again. However, we were somewhat determined to reach the lock, and, getting out a line, we started down the tow path, towing the Alga. After going possibly half a mile, we saw ahead a dark object advancing on us, which turned out to be a barge, towed by several mules. As it had the right of way, we poled to the other side of the canal, and, with a margin of about 2 feet, the Alga squeezed by, and we then resumed our task. The night was dark, with not a star visible, and, as we were not acquainted with the tow path, we fell into many holes. We finally concluded to carry a hand lantern, to enable us to reach the second lock, which was at New Brunswick, the lights of which soon became visible. Before arriving there, however, we came to a hand bridge, which had to be opened, and another bridge, under which we passed, its height being 75 feet above the water. Shortly after this we reached the second lock, and blew several times for the keeper; but, getting no response, decided to go and look him up.

Taking a lantern, I started for a light that I saw in a window on the other side of the lock, and, in crossing one of the gates, I tripped and fell in. The water in the lock was high, and I had no difficulty in getting out, as I could reach the top of one of the gates; but when one has to navigate on land as well as on water, especially if it is at night and for the first time, it is no cinch. As I was wet to the skin and it was getting on towards midnight, Pic volunteered to find the keeper. This gentleman, upon being found, claimed to have been asleep and not to have heard us blowing. I would advise anyone undertaking trips through canals to provide themselves with "blowing equipments," as one cannot make too much noise.

We were glad that we had succeeded in making this lock before midnight, and, tying up on the other side, we began to fix something hot to eat, our previous meal at midday being a cold lunch. Finishing our supper, we turned in, tired out from towing a distance of only two miles, but which seemed like twenty-two.

Rising rather late Sunday morning, we were unable to go to church; but we did a little sight-seeing at New Brunswick. Our supply of gasolene having been consumed, it was necessary to fill the tanks before proceeding further, and, being Sunday, the storekeepers would not deliver it. So each of us took a five-gallon can



ALGA, UNDER SAIL OUTSIDE OF ROCKAWAY INLET.

in each hand, and started for the oil house, about a mile away. Passing through the main streets, we attracted a great deal of attention, and, after answering many questions as to who we were and where we were going, we got the oil on board, at the same time bringing with us many visitors to see our craft. Some of these commented on the boat's size for such a journey and predicted that we would never reach our destination. It can be imagined how these expressions served to ease our minds as to the result of our voyage.

It was decided not to make a start before Monday morning, using the balance of the day to get the engine in working order again. Starting early the next morning for the last lock of the canal, at Bordentown, we reached there that night, and, passing through about eight o'clock, we tied up alongside the wharf in the Delaware River. About three-thirty the following morning I was awakened by the falling of several dishes, but in my sleepy condition paid no attention thereto. Shortly after, some more fell, and then came a bump on the floor, as if someone were having the nightmare. It was Lang, who had rolled out of his berth. Pic was aroused, and we all realized that the boat was listing badly, the tide having dropped about 5 feet and one side of the Alga being out of water. We got out on the mud bank and gradually worked her into deep water, the banks being very steep. We then tied her to a barge just ahead of us for the rest of the night and went back to sleep.

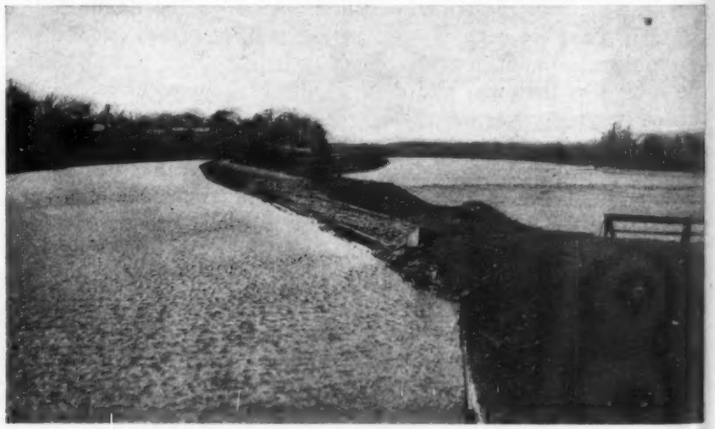
The next morning, after getting fresh provisions at Bordentown, we started down the Delaware River. After covering a mile or so, the fog shut in thick and we came to an anchor. We might have tried to go on by chart and compass, but we decided not to, as the river is full of sand bars, and it was a question of only a short time before the fog would burn away, though while it lasted we could not see from one end of the boat to the other.

We soon made another start and went along very well. Having a favorable wind, we did some sailing in the river; but you have to watch your chart very closely in order to avoid the sand bars. Usually these sand bars are designated by beacons, cans, or some other day marks, so that by following the chart closely one will have no trouble in navigating. In some instances the beacons had shifted somewhat, but in the majority of cases they were correct. About 3 p. m. we hove in sight of Philadelphia, and, as we had a favorable wind and strong tide, with the engine working, we soon arrived at that port. There is a lot of traffic in the river between Philadelphia and Camden, and, in passing through with a strong tide, you have to watch carefully to prevent a collision. Passing the lower end of both cities, we tied up on the Camden side, which is better for small craft, as there is about 10 feet of water there.

Anchoring in a safe harbor, we went ashore and crossed on the ferry to Philadelphia, and for two days we took in the sights of that city, almost forgetting that there were other towns to "take in" before reaching home. Finally getting under way once more, we encountered a south wind, so we had some good sailing. The wind was picking up all the time, and about three o'clock that afternoon we had to take in a reef. Up to that time we had covered a distance of about 45 miles, which put us off Newcastle. About five o'clock we had to lower our mainsail and sail under jigger and jib, for it was certainly blowing. It soon began to rain, with thunder and lightning, developing into a hard rain squall. As it was quite disagreeable on deck and was fast getting dark, we decided to anchor for the night at Kelly's Point, which was a better harbor than Newcastle, opposite, as it was certainly kicking up on the other side. The rain finally stopped, but the wind seemed to increase, and we threw over our small anchor and rope cable and began to cook dinner, after lashing everything down to the decks.

The ground being very hard, our anchor was unable to get a bite, and we began to drag; so we put over our heavy anchor and chain cable, and, with both overboard, we lay safe and sound. While on deck watching to see whether we would drag we noticed a small launch about a mile ahead of us with a large floating buoy to each side of it, about 400 yards apart. We paid no attention to it at the time, but while Pic was hanging up the anchor light he called my attention to the floating buoys, which were coming in our direction. We concluded that they were buoys that had gone adrift, and stayed out on deck to see where they were going to fetch up. They came closer and closer, and when they were about a hundred and fifty feet ahead of us we noticed floating corks strung from one to the other, and realized that it was a drifting seine—something we had never seen before.

This seine was coming up closer all the time, and soon the fishermen, in their launch, came toward our boat. When they reached us they began to bawl us out, yelling to us "to get the h—— out of the way." We thought we had as much right there as they did, but knew there would be some trouble when the mix-up came between the nets and our cables, so we began to pull up the anchors. It was blowing hard, and the strong current of the river brought a strain on the anchor cable that made it impossible to pull it up by hand; so we had to use the winch, which was slower but surer. We first got up the small anchor, but it was a job to get up the chain cable. About this time we were over the nets and the buoys were on a line with us. The fishermen then began to cuss us out; but we were still working on the winch, getting up the anchor slowly but surely. Seeing our difficulty in getting up the heavy chain cable, the fishermen came



THE RARITAN RIVER AND CANAL NEAR NEW BRUNSWICK.

aboard and gave us a hand, and we soon had the anchor on board. We could not start the engine, because the nets would get caught in our propeller, and, seeing this, the fishermen cut their nets, to prevent them from being torn to pieces.

After getting back in their boats they again began to bawl us out, and for a while it was quite exciting. They were hot against us for anchoring in the water in which they were fishing. It was enough to make a man mad to have to cut his nets, but we were ignorant of what was going on and realized the situation only when it was too late. The fishermen came back after anchoring their nets and informed us if we did not move from where we had just anchored for the second time that they would get some help and come out and see if they could not make us. It was either a question of staying there and getting into trouble or going to the other side of the river, where we would have a rough sea for the balance of the night. After taking into consideration how far we were from home, we thought it best to go to the other side of the river.

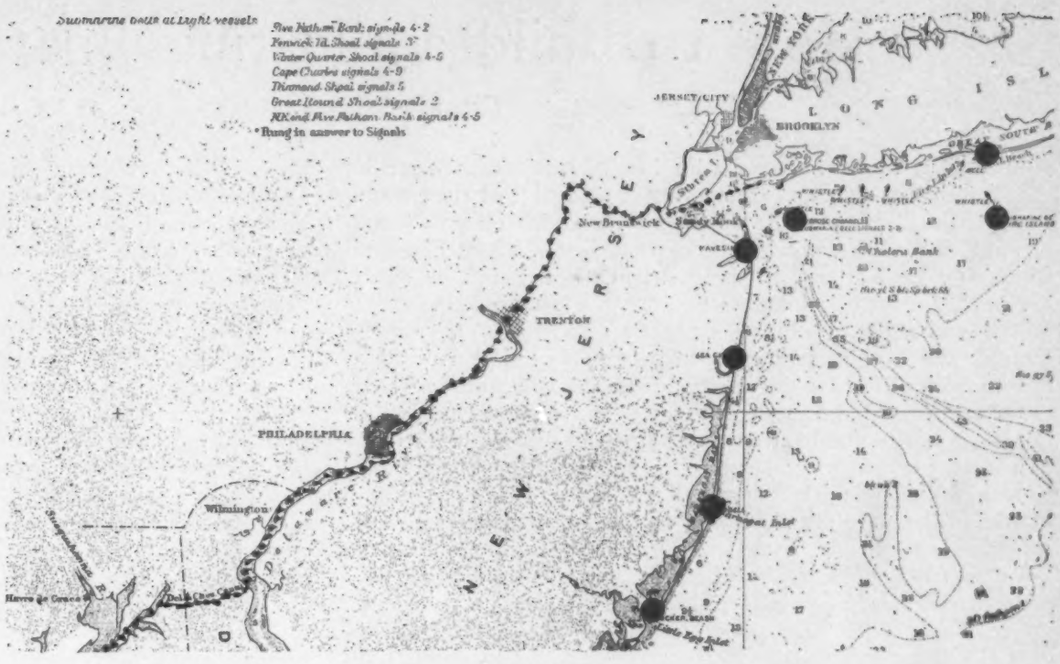


CHART OF ROUTE FROM NEW YORK TO HEAD OF CHESAPEAKE BAY.

We made a start; but, with the strong tide against us, it took some time to reach the other side, as our engine was only running on one cylinder. When we finally reached Newcastle the wind seemed to be blowing harder than ever, it was very dark, and we could only see the lights on shore. We could not tell how far we were from them, but we wanted to anchor in about 15 feet of water and yet get inshore as far as possible. Thinking that we had about 15 feet of water, Pic began to take soundings, and, to our surprise, found we were on ground in 2 feet of water with a very soft bottom. As the strong tide was drifting us further inshore, Pic did not lose time in getting our mud hook over.

With our pike pole we shoved her nose around into deep water, and, the engine being still going, we began to move. Pic had out all the anchor cable, which was 100 feet long, and, as the boat began to move faster and he was not able to get the rope up quick enough, he began to let out the slack which he had just taken in. Becoming excited, he started to run to the stern of the boat, still holding the end of the rope in his hand, tripped over the davit, and went overboard, still holding on to the end of the rope. He yelled that he was all right and standing on ground and for us to go and anchor in deep water. As it was blowing so hard we could hardly hear him, and it was impossible to see where he was; yet from his yell we knew that he was safe, and Lang got busy with the yawl to go and look for him, while I remained at the wheel, with the engine still running. I kept on making circle after circle, and when I thought I was in deep water I knew it was up to me to stop the engine—a thing I had never done before; but, having seen Lang handle the switch, I knew that, by pulling it down, the engine would stop. By this time Lang had found Pic, and both were coming toward the boat with the rope cable, while I was endeavoring to get over our heavy anchor, the cable of which was very much tangled. The boys were on their way back, but could not recognize our boat, as there were other craft near with anchor lights out, so I had to wave ours. They were soon on board, Pic looking like a drowned rat and full of soft mud, but still sticking to the anchor rope. For a while we thought he was going to sleep with it that night, as he kept holding it for an hour or more. Being very cold, he appreciated the drink that we gave him. I do not think that I ever before saw a river kick up as this one did. I have seen the Mississippi rough, but it could not compare with the Delaware that night.

It was then eleven o'clock, and we began to eat our dinner, which had been cooked about five hours before, and, after doing this, it did not take us long to find our bunks and get to sleep.

We did not wake up the next morning before nine o'clock, and then we could hear the wind still whistling through the halyards. We went on deck and noticed a three-masted schooner lying about 300 yards ahead of us hard aground. A yawl was lowered from her shortly afterwards and a sailor came on board of us, telling us of their hard luck during the night. They were on their way to Philadelphia, and the heavy wind and tide carried them ashore.

About 10:30 a. m. we started again, under only jigger and jib. For a while the southwest wind died out, but it looked bad in the N. E., and after we had gone about two miles it broke out. I thought that the southwester of the night before was a hard one, but it could not compare with this northeaster. It was blowing so hard that the schooner blown ashore the night before was blown off again and was soon afloat, a turn of luck that must have been appreciated, for it would have been a hard task to have pulled her off by human effort. We were then in the middle of the river, and, making for the nearest side, we dropped anchor, thinking that it would blow over shortly. However, after a two-hour wait, and the wind increasing and the boat drifting with both anchors out, we saw that it was a question of a very short time before we should be aground. We, therefore, reefed all sails and started the engine, which helped us to get up the anchors.

BRIDGE ACROSS THE DELAWARE RIVER AT PHILADELPHIA.

(Continued on page 158.)

How to Build a Floating Boat House

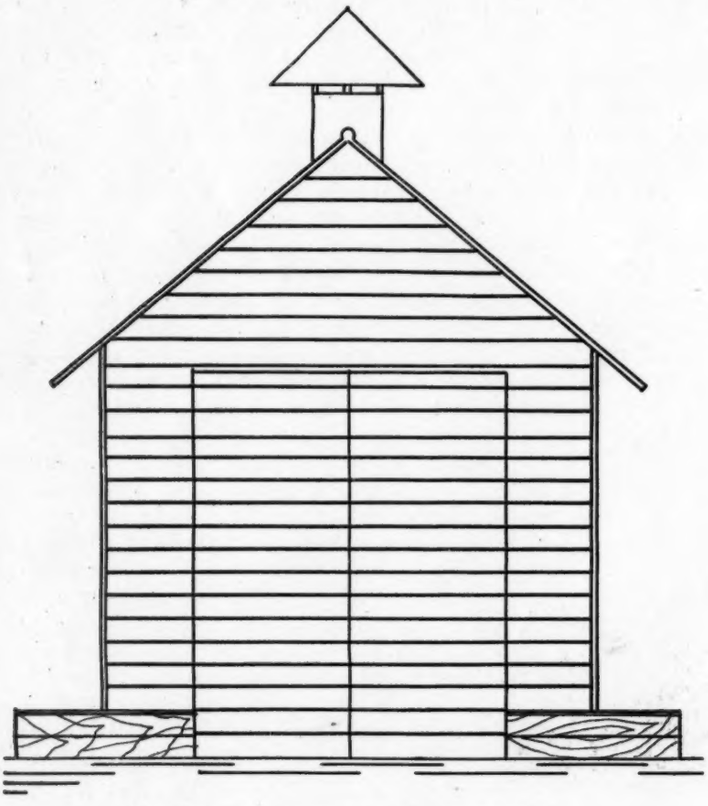
By J. M. GRASSER

THE motor-boat owner who has had any experience in tying his boat up to a mooring or alongside of some dock, with the accompanying drawbacks which either method offers, will readily appreciate the advantages of a boat house in which to moor his boat. This is particularly true in the case of the smaller class of runabouts and open or canopy launches of 30 feet and under, as these are usually cared for by the owner himself, and it necessarily takes a great deal of time and attention to keep a boat looking well when she is constantly exposed to the elements. In some localities, where the water level is stationary, a boat house built on stakes or spiles driven into the bottom is very satisfactory; but in other places, owing to the great rise and fall of the water, a house of this kind would be practically useless. The only practical way to overcome the difficulty of variation in the height of the water by reason of tides or freshets is by the use of a floating boat house, which has the advantage of always remaining at a uniform height above the surface of the water.

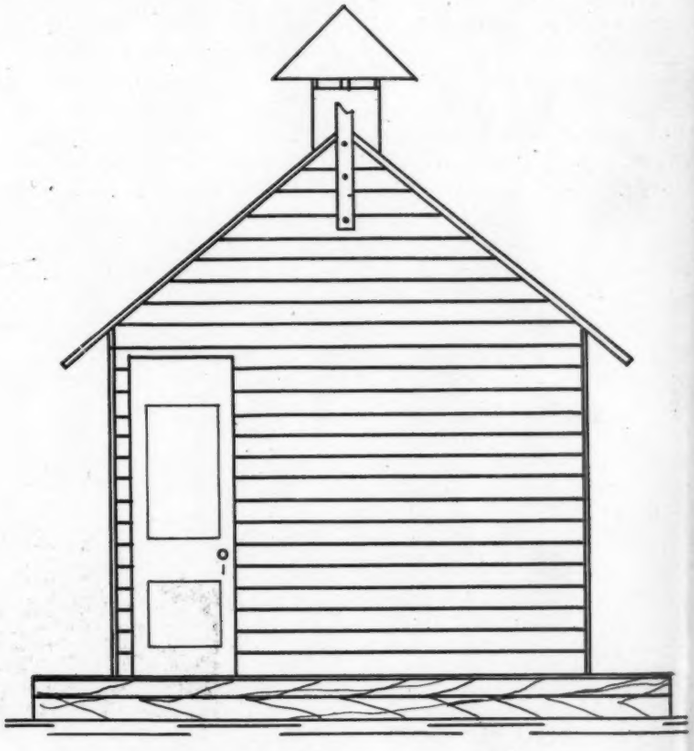
It is a great convenience to moor your boat in a covered slip that is just the right height above the water for taking care of the boat easily. It protects the craft from the elements, and there is no need of stuffing cushions and equipment into a small locker at the end of a run for protection. A boat can be left practically as she is when the run is finished, thus obviating a lot of preparation preceding the use of the boat the next time. You merely have to untie her lines, open your boat house doors, and the boat is ready, with everything in its place. A boat house also allows advantage to be taken of a stormy day for cleaning up the boat and making any alterations and repairs that are necessary, or any overhauling of the engine that may be required—work that is practically impossible in bad weather without a roof over your head. The many advantages of a house of this kind are so apparent that I will get down at once to a description of the actual construction, which is a very simple matter, if started properly and carried out as it should be.

The house which I have described here, and of which I give the specifications, is laid out for a boat of about 30 feet in length by 5 to 6 feet beam, but these measurements could be easily changed to suit any size boat, the principle of construction remaining the same.

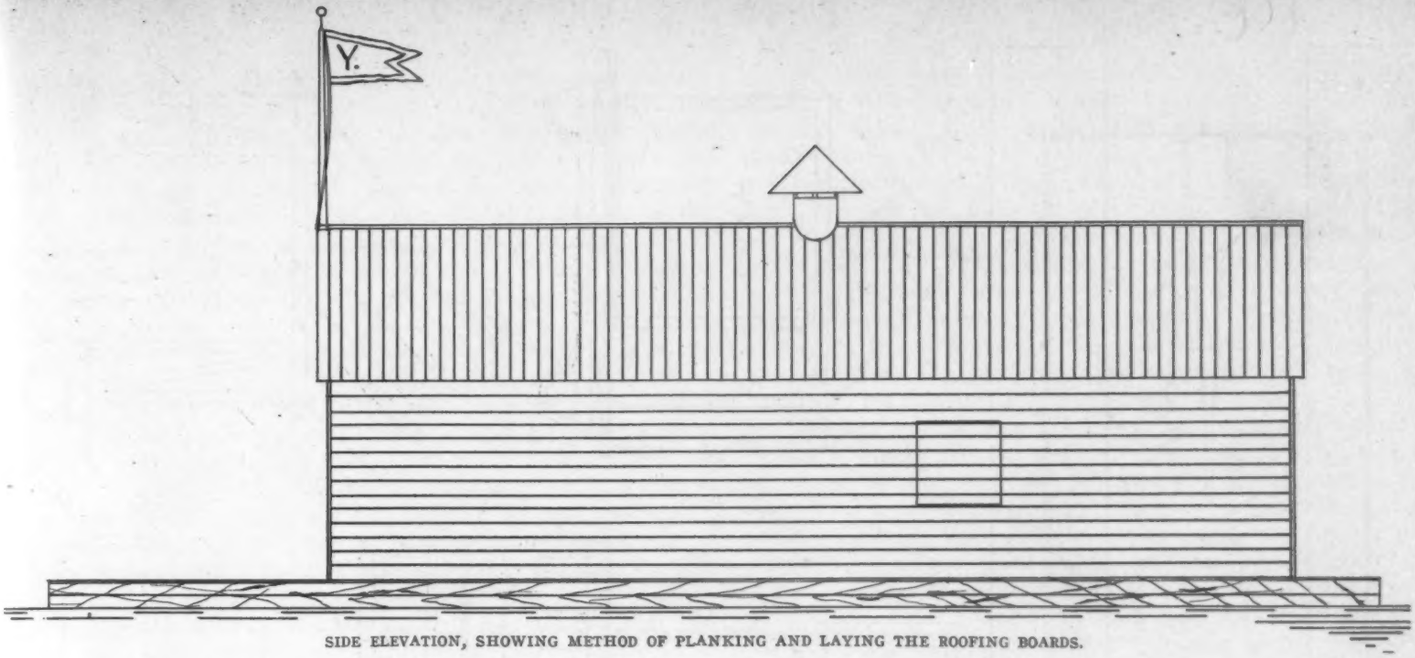
It is first necessary to build two long floats. To do this you will require four lengths of timbers, 47 feet 3 inches long, 4 x 6-inch stuff, preferably spruce or pine. Of course, you will not be able to get this in one piece, so it will be necessary to make some splices. These should be long, ship-lapped splices, each from 24 to 30 inches long, securely bolted together. After this has been done, space each pair of these timbers 20 inches apart, and hold them in this position with 2 x 4-inch pieces, both underneath and on top, either bolted through the 6-inch timbers or securely fastened with lag screws. The 2 x 4 pieces on the bottom need only be 28 inches long, but those on the top should be 4 feet, so as to extend beyond the longitudinal stringers, and spaced as shown by dimensions in rear-end view of the construction drawing. The two-by-fours should be spaced apart in such a way as to allow 36 inches between them. By referring to the construction plan, you see that this will allow a space 20 by 36 inches for the barrels to lie in. There are various kinds of barrels that may be used for this purpose, but the best are lubricating oil barrels. Tar barrels are all right, and the only objection to their use is that there is usually a little accumulation of old tar, which may give your pump trouble. Ink barrels are good, and may be secured



REAR ELEVATION, SHOWING SWING DOORS TO SLIP.



FRONT ELEVATION, SHOWING ENTRANCE TO HOUSE.



SIDE ELEVATION, SHOWING METHOD OF PLANKING AND LAYING THE ROOFING BOARDS.

at any newspaper office. The house under description will require 28 barrels, 14 on a side.

After the two floats are ready they should be spaced 6 feet 8 inches apart to the inner sides of the 2 x 4 cross pieces. Then the cross timbers, 14 feet 8 inches long, should be securely bolted to them at one end, using 2 x 4-inch stuff on top and 4 x 6 on the bottom, employing 4 x 6-inch pieces for cross braces, as shown in the drawing. It is quite important that these braces should be in place, as a comparatively short end is left in which to tie the two floats together, and they will be subjected to severe strain at times, owing to the length of the slip. Now put a temporary cross beam on the opposite end, so as to tie the two floats securely together while they are in the course of construction.

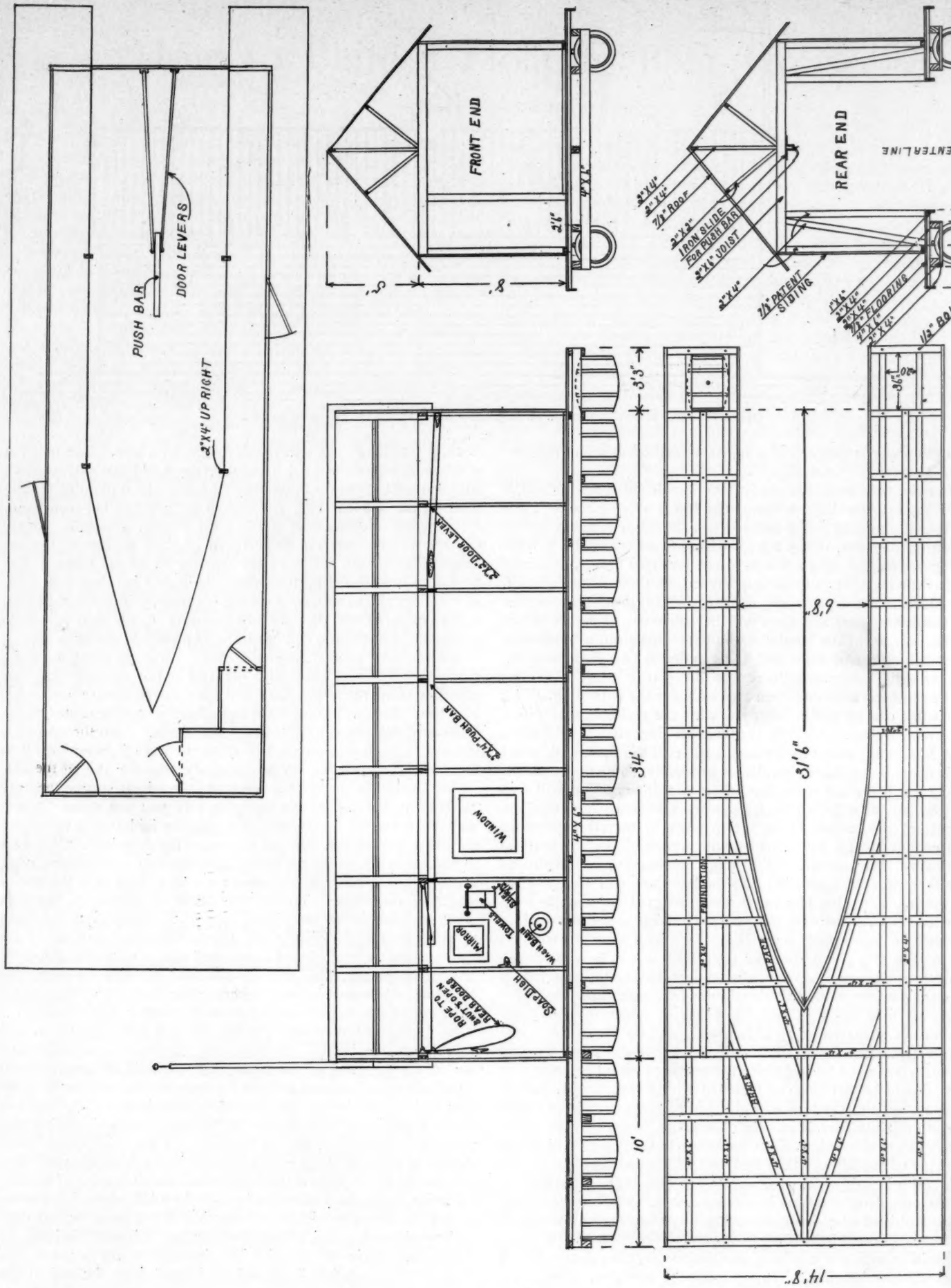
When this has been done you are ready for the launching. This framework can be easily launched with the assistance of a few planks and rollers. After it is afloat the first step is to place a barrel filled with water under each corner of the float, and, when this is done, pump these barrels out gradually, so as not to throw one corner in the air while the others are down. You will find that four barrels will float the framework sufficiently high to allow the rest of the barrels to be put in place by merely depressing them enough to slip under, which will save the labor of pumping out twenty-four barrels. In placing the barrels, be careful to place them in such a position that the bunghole will face just inside the house, so that you can insert a pump at any time to keep them free from water. While you are putting in the barrels it is also well to fasten them securely in place with a strong wire, so that in case they should become filled with water, or your house should foul on a stake or any other object, letting the water drop away from under it, the barrels will not fall out and float away.

You are now ready to deck the float, for which purpose common boards about 10 or 12 inches wide will do very well. Just cover over, laying the boards lengthwise, keeping in mind the fact that one board must be laid along the center of each float; and this board should be left loose or fastened with a few screws, so that it may be readily taken up should it become necessary at any time to pump out the barrels in case of leakage, or when it is necessary to insert a new barrel, as occasionally the hoops will burst. The edge of the slip can then be faced with a board about ⅞ inch thick and 6 inches wide, as shown in the drawings. It is well to cap the outside of the float in the same way, as it is quite a protection to a boat when lying alongside, as well as to the float itself.

The next process is building the house on the float. First locate the position with a 2 x 4-inch foundation piece, as shown in the constructional drawing. Then get out the uprights, from 2 x 4 stock, 8 feet long; you will require eight on a side. Toe-nail the first one on top of the 2 x 4 foundation piece and fasten it securely with a small temporary brace, so that it will stand plumb. Do the same on the opposite end, and stretch a chalk line between them. Now the intermediate ones can be filled in, and, when this is done, the 2 x 6-inch joists can be fastened in place across the top between them, which will give the framework of the house. The next step is to board up the sides. This may be done with common siding, patent siding, or ceiling not over ⅞ inch thick, though lighter material will do. Before boarding up the ends it will be necessary to put in the end uprights, as shown in the drawing.

We can now proceed with the roof. First get eight uprights, 2 x 4 inches, 5 feet long, with one end ripped up the center for 4 inches from the 4-inch face and then sawed square across for 2 inches. This will allow them to be lined up on the center of the joists and fasten securely to them with nails. Nail the end ones in place, stretch your chalk line from the top of these and fill in the other six uprights. You are ready now for the ridge pole, which should be made of a piece of 2 x 4-inch spruce securely fastened to the top of the uprights. If you use about ⅞-inch matched material for a roof, it should be laid lengthwise from the ridge pole to the sides, as shown in the drawings. It is best to place a brace, as shown in the end views of construction plan, made of 2 x 2 material supporting a 2 x 2 ridge pole the entire length of the house. This is not absolutely necessary, but it is better to have it for additional support. There is no objection to using the regular ceiling and a light beam fore and aft of the house, as either roof should be covered with a waterproof roofing or roofing paper. This is easily laid, and it keeps the water out for years, whereas it is hard to keep other roofs tight. This material can be purchased at any hardware store or supply house.

As the house is now under cover, we will devote our time and attention to the inside. First get out the doors—one single one for the forward end of the house, which should be supplied with a padlock or a lock and key, and a pair of double doors for the rear end of the house. After these have been made, you can mount them in place on hinges, using heavy strap hinges for this purpose. Two slides will be required for the push bar. These should be made of strap iron, as shown in the drawings; but they can also be made from a piece of wood, which would, of course, cut down the headroom, on account of the additional thickness required for strength. This push bar is nothing more or less than a piece of wood, 2 x 4, 18 feet long, suspended from the joists by these slides above mentioned. The door levers can be made of a piece of 2 x 2, 10 feet long, and are hinged from the end of the



CONSTRUCTION PLAN OF FLOATING BOAT HOUSE, SHOWING FRAMEWORK, FLOOR, AND SIDE, FRONT AND REAR ELEVATIONS.

push bar on either side, with the opposite end hinged to the doors, as shown in the drawings. The inboard end of the push bar can be fitted with a large screw eye, and three deck halyard blocks should be placed on the third joist from the end, as shown in the drawing. A piece of ⅜-inch diameter line should be reeved through these blocks with either end fastened to the eye on the push bar. By pulling one way the doors can be opened, and by pulling the line the other they can be closed. A cleat should be fastened in place to which to belay the line, and this also serves as a lock for the large doors.

There should also be two upright pieces on either side of the slip at center, as shown in the rear end drawing, to be made of 2 x 4, which may be spiked to the roof joists on top and the sides of the slip at the bottom. If there is a rail on the boat, these pieces will absolutely prevent any part of the hull touching the slip. Two lines should be provided on the after end and two on the forward end of the house for mooring the boat securely in the slip, and it is also well to have two lines from the first pair of uprights, which will hold the boat from going forward in the slip.

This completes the house up to the stage of any conveniences or additions that the builder may want to add. The writer has sketched in a few of these, which he has found by experience to be valuable.

It might be well to mention that the window shown is not a glass window, as it has been found advisable to simply make an opening with a wooden shutter, hinged in place, so that it may be opened for ventilation and light, and may be securely closed when the house is not in use.

It is quite important that a ventilator of some kind should be put in the roof, as the hot sun on an enclosure of this kind creates a great deal of heat, and means should be provided for carrying it off. I have not deemed it necessary to go into any great amount of detail in this, as the proposition is so plain that the pictures really tell the story.

The material for a house of this kind costs but little, and there is no great amount of labor involved in the construction. I have not specified any particular material, as some will want to build with second-hand stuff; others will want to use the commonest kind of building material, and still others may want to use the best. I have, therefore, left this as a matter of choice, but by all means the framework should be bolted together so that it will stand racking. If it is merely spiked together, it will be all right for a time, but it is sure to be short-lived.

The proper way to moor a house of this kind is with the stream, so that in coming into the house your boat will be either with the current or against it, which will give you perfect control. As piles are expensive, I have found it the best policy to build an approach 24 inches wide straight out to deep water with a dock across the end, two planks wide, and about the length of the house. This may be constructed by driving stakes into the ground, using a good 4 x 4-inch joist, or a good fish stake, and these should be securely braced together. A cable passing around the framework of the float at either end and around the stakes (passing through a wooden float, so as to keep the cable from binding on the stakes) and clamped together with cable clamps will serve to hold the house in place.

In conclusion, it is only necessary to say that a house built like the one here described will save its cost many times over, both in the convenience it affords and in the protection to hull, engine and equipment.

CONSTRUCTION PLAN OF FLOATING BOAT HOUSE, SHOWING FRAMEWORK, FLOOR, AND SIDE, FRONT AND REAR ELEVATIONS.

The Lady Maud, Schooner Yacht

A NARRATIVE OF HER LOSS ON ONE OF THE BAHAMA CAYS, FROM THE ACCOUNT OF A GUEST ON BOARD

By W. CLARK RUSSELL

CHAPTER VIII—Continued

SIR MORDAUNT wrung my hand, and was good enough to compliment me warmly on the manner in which the rescue had been effected. He told me that his wife and niece were below with the woman, and begged me to go and change my clothes, which were indeed wet through. But this I answered I would not do until I had seen the men aboard and the boat at the davits. In a manner, I felt responsible for their safety, more especially as Tripshore remained in the boat to hook her on, leaving nobody in command but Purchase, whose inactivity during our return from the wreck had by no means improved my opinion of him as a seaman.

When all the men but Tripshore were dragged over the side, the boat was dropped astern and carefully hauled under the davits. All hands came aft and tailed on to the falls; but before the boat was alongside I flung the end of a bowline into her and shouted to Tripshore to put it under his arms, so that, should he fall overboard, we could fish him up without trouble. This undoubtedly eased the man's mind and made him work more coolly. And certainly never did he stand in greater need of his nerves, for nothing but a steady eye and nimble hand could have saved the boat, that, as the yacht leaned down, rose to a level with her rail, and then sunk below under the bends, until I had to fork my head over the side to see her.

"Hoist away!" and the boat came up hand over hand.

"Thank God for that!" said I, as the falls were belayed, and Tripshore, throwing off the bowline, jumped on to the deck. "Now I'll go and shift my clothes;" and down I bundled, exulting, as any man would, over our successful exploit.

There was nobody in the cabin, but I heard voices in Carey's berth as I passed to my own, and supposed that the ladies had carried the poor woman there and were giving her a dry outfit. I made short work of my own toggery, and in five minutes was on deck again, by which time the reefed mainsail had been hoisted and the yacht was breaking the seas as she started afresh on her cruise. The wreck was broad on the weather quarter, and I stood in the companion looking at her. There is no inanimate object that appeals so pathetically to the feelings as a deserted wreck tossing upon the high seas. Shorn of her beauty, her masts broken, her rigging trailing in confused heaps, surrounded by the great ocean that makes her desolation supreme, she resembles a dying creature: she seems to know her fate, and to be faintly struggling to save herself from vanishing in the fathomless grave that slowly sucks her down.

Old Purchase stood near the wheel, looking very dogged and sullen, but Sir Mordaunt was not on deck. Catching sight of the steward, I called to know where the baronet was. He replied that Sir Mordaunt was in the forecastle, seeing to the shipwrecked men. I went to the forecastle hatch and sung out to know if I might step down.

"Come along, Walton, come along," shouted Sir Mordaunt; so I stuck my toes into the up-and-down ladder and dropped into the forecastle.

This was my first visit to this part of the vessel, and I was surprised by the roominess of the interior, considering the tonnage of the yacht. There was a double row of bunks on either hand, a good-sized square table that traveled on stanchions, so that it could be hoisted up out of the way when not wanted, with lockers around. The deck was white, everything very clean, and the place in excellent order. But you felt the motion here as it was to be felt in no other part. It was like standing at one end of a seesaw plank, and the jump was often sharp enough to make one reel.

The three men whom we had rescued sat at the table, eating with slow motions, and yet with a kind of avidity that was made distressing to witness by their languor, which was that of men in the last stage of exhaustion. Such of the yacht's crew as were below stood at a respectful distance looking on, whilst Sir Mordaunt leaned with one hand upon the table, talking to the poor fellows and encouraging them. They all three threw down their knives when they saw me, and rose very shakily from their seats, and whilst they extended their hands for me to grasp, thanked me in broken tones for having saved their lives. I was quite unprepared for this, and for a moment was unmanned by their pitiful faces and the corpse-like drooping of their figures, and by the low, melancholy pitch of their voices, which quivered with emotion.

In the hurry and anxiety of the rescue I had taken no notice of their appearance; as they had jumped into the boat, they had been let to lie in the bottom, where, of course, from my place aft, I had not been able to see them. I now ran my eyes over them, and never was the cruel usage that the sea gives to men whom it has mastered more lamentably illustrated than by these figures. It is true they had got on some dry clothes, lent them by the yachtsmen, but their faces were miserable to see. The fire of famine and mental suffering sparkled in their deep-sunk eyes; their lips were white, and were scarcely defined upon their flesh; their cheeks were hollow, and there were excoriations, which looked like burns or scaldings, upon different parts of their faces; whilst their nerveless, shaking hands resembled fat or wax, swelled up and made to look like lepers' hands by the salt and the ceaseless washing.

I sat down opposite them, and Sir Mordaunt said:

"Their vessel was the Wanderer, bound from Pensacola to Liverpool. They had been four days in their awful plight, Walton, when we rescued them."

"Do you mean four days without food or drink?" I asked.

"Yes, sir, so help me God!" answered one of them, in a hollow, broken voice. "We got caught in a gale o' wind that almost knocked us to pieces, and in that same gale we started a butt, I reckon, for the water came in fast and drowned the vessel."

"What has become of the rest of the crew?" I asked.

"Why," answered another man, "the gale left us only one boat, and we got that overboard and all hands crawled into her. But afore we could get her clear a sea chucked us against the ship's side and stove us. Three of us got on deck, and I caught the woman by the hair—she's the captain's wife, sir—and dragged her up. All the rest went down. We heard them screamin', but we could do nothing, and it was soon over."

"Did you sight nothing in those four days?" I inquired.

"Ay; a big steamer passed us—she must have seen us—but she never stopped," replied the other men—one answering after the other, in turns, as though they felt the need of relieving one another.

"You were right, you see, Sir Mordaunt," said I, in a low voice: "that mirage was surely a Heaven-directed signal."

We stayed about ten minutes talking to the men, in the course of which I gathered that the crew had originally consisted of fourteen souls, and that these men who were saved were able seamen; that their ship was only two years old, and her cargo worth a deal of money; but that nothing could have resisted the gale that struck them, which, from their description, I took to be a cyclone, of which the skipper must have headed his ship into the thickest and most dangerous part, in ignorance, perhaps, of the nature of those rotary storms. I advised the poor creatures to turn in and sleep as long as they could, and Sir Mordaunt and I came away.

He held my arm as we walked slowly aft. He was much affected, and could hardly speak for some moments.

"Oh, Walton," he exclaimed, presently, "how little people ashore know of what goes on at sea! How impossible it is to understand the horrors of shipwreck without experiencing it, or beholding it in its dreadful reality, as we have!" And he extended his hand as he said this toward the water-logged bark, that was now a long way astern, and scarcely to be seen amid the spray that dashed over her and veiled the ruins of her spars. "When I went into the forecastle one of my crew whispered to me that, at the sight of the food, two of the shipwrecked men burst out crying. It will not bear thinking of. I have never been brought face to face with human misery like this before."

"Nay, don't let us bother over it," said I. "The men will do, and the ladies will no doubt pull the poor woman through. That's a capital boat of yours. No ordinary quarter-boat could have lived in this sea." And I looked at the running and splashing and hissing surges, which sometimes swelled up white with the foam of our driving stem to within a foot of the bulwark rail, and leaped and sparkled far as the eye could reach.

I put my head into the skylight to see if breakfast was ready, and perceived the dishes on the table and the steward in the act of reaching for his bell. Indeed, the job of saving the shipwrecked men had occupied more time in performing than it takes in reading about it. It made me wonder to think how long we had been in the boat and among the seas; for, though it had not seemed a long while to me, it was hard upon an hour and a half from the time of our quitting the yacht to the moment of hoisting the boat to the davits.

Lady Brookes, Miss Tuke and Norie entered the cabin as we went down the companion steps, and I was rather taken aback by Miss Tuke coming up to me, with her hand outstretched, and telling me that I had acted "as a real sailor would," and the like. I thanked her for her good words, and there stopped, secretly relishing these compliments too much from *her* to deprecate them, and yet not wanting the action to take one particle more of significance than it deserved.

"Here at last is a real adventure for you," said I. "But the poor woman—how is she?"

"Oh, Mordaunt," exclaimed Lady Brookes, answering the question by addressing her husband, "she is such a poor, delicate creature. Her husband was the captain, and he was drowned with the others when the boat upset. She was starving and ravenous, and yet she could not swallow, and she might have died with the food before her for the want of being able to swallow if Mr. Norie had not made her drink water with every mouthful."

"To bring the muscles into play," said Norie.

"Well: but what has become of her? Is she in bed?" asked Sir Mordaunt.

"Yes, in Carey's bed," answered her ladyship.

Sir Mordaunt heaved a sigh. "Think of the poor creature exposed for four days and nights to the seas breaking over that sunken hull! How can flesh and blood bear such suffering? And her mental anguish!"

"*There* you hit the worst part of shipwreck," said I. "It is not the hunger and thirst only; it is the thoughts of your own lonely, miserable doom, the friends far away, who may never know what has become of you, the memory of the people who have been drowned in your sight——"

Here Sir Mordaunt interrupted:

"Pray, Walton, hand me one of those eggs," and he winked ferociously.

"Oh, Mordaunt!" cried Lady Brookes, hysterically, "I wish we were safe at home!"

"Are you not as safe here?" he replied. "Come, come, don't let the shipwreck trouble you."

"It's no more than passing a tombstone in a journey," said I. "That wreck means just as much as a grave that your eye lights on as you drive along in a carriage."

"You have not seen the woman, Mr. Walton," said her ladyship, in a trembling voice, and very pale. "Mordaunt, her eyes were like live coals, and you should have seen her as Ada and Mr. Norie supported her through the cabin, with her long black hair as wet as sea-weed plastered over her hollow face!" She hid her eyes in her hand and shuddered violently, whilst Sir Mordaunt looked at me with a melancholy shake of the head, as though he would say, "I was afraid of this from the beginning."

We went on with our breakfast in silence, none of us in particularly high spirits, and we certainly did not stand in need of any emotional outbreak in Lady Brookes to depress us. For my own part, I was beginning to feel the effects of the excitement and anxiety of the time spent in the boat, many years having passed since I had been engaged in so rough and hazardous an adventure, and my training ashore had not been of a kind to enable me to support such an experience very sturdily; so, when breakfast was over, I went to my cabin and threw myself on the bed, meaning merely to rest myself, instead of which I fell asleep.

For three hours I slept, and when I awoke I felt buoyant with the refreshment of that sleep. It was still blowing fresh, and the sea was high, and the yacht plunging over the surges, and frothing the water for a league away astern of her, and driving through it nobly under a three-reefed mainsail and standing-jib, the gaff-foresail having been taken in whilst I was below. The sun was high, and all the clouds gone. Indeed, the sight of that strong sea and the sound of the wild wind storming through the rigging, and all overhead a liquid, beautiful, tropical azure, untarnished by the smallest puff of vapor, made me pause when I had gained the top of the companion steps and look up with wonder. It was more like being off the west coast of South America, where heavy gales rage under blue skies, than in the North Atlantic.

I found Sir Mordaunt alone, looking at the sea.

"I am glad indeed, Walton," said he, "that I made no objection to your going off to the wreck. The poor creatures must have perished had we carried out Purchase's idea and waited for the wind to go down. You acted bravely, very bravely, and I am proud that my men should have backed you so well. They shall not go unrewarded."

"Praise them as much as you please," said I. "They deserve encouragement. But let us have no more about my part of the undertaking. Why, is not that one of the shipwrecked fellows yonder?"

And there, sure enough, just to leeward of the foremast, was the first of the men who had jumped from the wreck. He was squatting on his hams, and smoked a short pipe, the bowl of which was inverted, and around him stood a group of the Lady Maud's men listening to his yarn with rapt attention, their figures swaying to the motion of the vessel. He was like Coleridge's ancient mariner, with his glittering eye and pale forefinger, which he scored the air with as he talked.

"I've been watching him," said Sir Mordaunt, "and wondering what we are to do with the poor creatures. We must keep them, I suppose, until we arrive at Kingston, and God knows they are heartily welcome."

"Unless we fall in with a homeward-bound ship," said I.

"To be sure; and then we can transfer them. I had never thought of that."

Just then the man caught sight of me. He instantly stood up and pulled off his hat. I beckoned to him. He rammed his finger into the pipe bowl he was smoking and, thrusting the pipe into his breeches pocket, came aft. I wish I could describe his manner; the working of his pinched and hollow features; the twitching of his hands, as though he would embrace me; and the speaking and moving expression of gratitude that softened and humanized his eyes, though, but for that look, the fires which famine and anguish of mind had kindled in them, and which still burned there, would have made them shocking to see.

"I am glad you are hearty enough to be about," said I. "But it would be better for you to keep to your bunk, I think. After what you have gone through you want rest quite as much as food."

"I can't rest, sir; I can't be still," he answered. "It's fearful to be quiet and shut my eyes, for then it's all happening over again. No; I'd rather be on deck, sir—leastways if you don't wish otherwise. God bless you, sir!"

"How are your mates?"

"Sleeping like dead men, sir. But talking and keeping my mind going does me more good than sleeping," said he, quickly, as if afraid that his reference to his mates would make us send him below.

I now told him that it was our intention to put him and the others aboard the first homeward-bound ship we should meet that would take them, and that if we failed to meet with such a vessel, we should land them at some West Indian port, most probably Kingston.

"But we'll take care to land you where you will find a ship to carry you home," said Sir Mordaunt.

The poor fellow was very grateful, and thanked us humbly for our kindness. Miss Tuke joined us as we talked to the man, and spoke to him in a cheering way. There was no affectation in her sympathy and liking for sailors. She saw further into their life than most girls would, and found something to move her in the thoughts of the great, mysterious ocean into which Jack sails, and the lonesomeness and suffering of the fate that often befalls him.

I was somewhat surprised that Sir Mordaunt made no further reference to the part old Purchase had taken in the business of the rescue. I thought he would have coupled his unsailorly half-heartedness on that occasion with his grogginess on the preceding evening, and found the two strong enough to support a prejudice. I did not even know whether he had spoken to the man about his trick of overdoing his drams, nor would I inquire. A conversation might have taken place between them when I was asleep, and Purchase would, of course, know what excuses and what promises to make, and what to say for having opposed the sending of a boat to the wreck. As Sir Mordaunt said nothing about him, I considered it would be an intrusion if I volunteered any further opinion on him in his capacity as skipper. But this self-imposed reticence of mine only served to increase my distrust and harden my contempt of the old man as a seaman.

It was not until the evening of the day of the rescue that I saw the woman whom we had saved. It was after dinner. I had been smoking a pipe on deck, enjoying the headlong wind that showed no sign of abating, and that was driving us foaming and dancing athwart the parallels toward the trade-wind, and promising us a fast and noble run to the West Indies. I stepped below to refill my pipe, and, on entering the cabin, saw the woman sitting in an arm-chair, talking to Lady Brookes and Miss Tuke.

She looked at me vacantly, not remembering my face; but when Lady Brookes (who had recovered her spirits and given up lamenting—for a spell—that she was not ashore) said, "This is Mr. Walton, the gentleman who steered the boat," she jumped up, and, grasping my right hand in both hers, kissed it again and again.

Although she was very wan, with the aspect of emaciation that characterized the three seamen, she was certainly not so formidable as the picture that Lady Brookes drew of her at breakfast had led me to suppose. Her hair was brushed and braided—it was black as ebony, and very abundant—and the bight of the braided

loops fell low on her back. She had exchanged her torn and soaked gown for a dress belonging to Miss Tuke; and I perceived that she possessed a figure that suffered nothing even from contrast with Lady Brookes' fine shape. She was of middle height, and I thought that when health had colored her lips and cheeks afresh and filled out her face she would turn out to be a handsome woman. Her age apparently did not exceed six or seven and twenty years, and she did not look older than that now, in spite of what she had gone through. I also noticed what I was hardly likely to perceive when I had heard her voice amid the thunder of the wind and the cannonading of the surges storming the dismantled wreck—I mean that she was Irish. Her accent was very rich, but educated, so that there was nothing in it that I could illustrate by spelling. There was plaintiveness and winning and drawing music in her tones, as she poured forth her thanks to me, with the bright tears flowing down her hollow face.

"Will you call my husband, Mr. Walton?" said Lady Brookes. "He does not know that Mrs. Stretton"—for that was the woman's name, it seemed—"has left her cabin."

Forthwith I summoned my friend, who got up from under the weather bulwark, where he was smoking, and, throwing his cigar overboard, followed me into the cabin. There was a bland, consoling courtesy in the manner in which he took the woman's hand and spoke to her that was incomparable in its way. He put fifty inquiries to her about her strength and health, and the like, and wound up by letting fall her hand, and, raising his own, thanked God with lifted eyes that his yacht had been the means of saving the lives of the sufferers.

He then spoke to her of his proposal of transferring her and the men to a homeward-bound ship; or, failing that, of landing them at Kingston, Jamaica.

"Are you going to Kingston?" she asked, eagerly.

He answered that he had not intended at first to put into any port; but that the yacht would probably have to touch somewhere for fresh water, and that he would choose Kingston, for the sake of the magnificent scenery of Jamaica.

"I have a brother-in-law who is a shipping agent in Kingston," said she, still speaking anxiously, but in a subdued voice; and she was proceeding, but stopped, with a look of embarrassment.

"In that case," said Sir Mordaunt, immediately, seeing, as we all did, indeed, the reason of her hesitation, " we will gladly decide to carry you to Kingston."

"You are very good, sir. I should not have had the boldness to ask so great a favor. Indeed, such kindness, following my trial, is more than I can bear," and the poor thing again burst into tears, and cried and sobbed most piteously.

Sir Mordaunt was just the man to be affected by a woman's tears; and while she cried he kept his face hung, and his features worked as if he would cry too. Miss Tuke, by way of diverting all this sorrow, led the poor young widow to tell her story to Sir Mordaunt. I thought at first that this was like putting her on the rack, but speedily saw that it did her good to talk of her troubles.

She had only been married a few months, she said; indeed, she married her husband in the very week the bark sailed from Liverpool. We all sat listening with a kind of fascination whilst she told the story of the gale and the wreck and the capsizing of the boat, by which all the people but four perished. The muffled roar of the sea outside; the sharp shrieking of the wind in the rigging, which latter sound echoed in clear notes down the skylight and companion; the wild lifting and plunging of the schooner; the crack and grind of timbers and bulkheads; the quick dislocating jumping of the swinging trays, and the rattle of the firearms in the rack, and the significant patter of spray, like a heavy fall of hail upon the deck, gave such a color to her narrative as kept us all hearkening with rapt attention to her round and fluent accent, made passionately plaintive by the horrors of her memory. I think I see the picture now: Lady Brookes, watching the speaker, with her black eyes all ashine, and her hands tightly folded, and her lips compressed, and her brows gathered; Miss Tuke, full of sympathy and wonder and fear; Sir Mordaunt, supporting himself by the table, balancing his tall figure to the heavy lurches, smoothing down his beard, sometimes looking at the woman and sometimes around him at us, with an expression of consternation; I, full of hearty pity for the poor, bereaved soul, who sat telling her story with dramatic power, but utterly unconscious of the effect she produced.

She made me shudder when she came to the starving part of her story. In the evening light her features were as white as death, and her fiery black eyes were something to shine in the face of the very spirit of Famine. That day of the thunder-storm was the third of their sufferings, and the calm was a long agony to the parched and helpless and hopeless wretches. The froth stood upon the lips of the men, and one of them put his teeth to his arm, but his heart failed him; and as she told us this, carried away by the previous memory, and anxious that we should fully grasp the anguish we had released them from, she acted the thing—raised her arm to her lips, with her burning eyes fixed on Lady Brookes' face as she did it; whereupon, with a sudden choking cry, her ladyship started to her feet, and fell into a dead swoon in the arms of her husband.

Poor Mrs. Stretton was panic-stricken by the effect of her story. "Oh, it is my fault—it is my fault! How rash I am!" she cried, and sprang to Lady Brookes' side, and kissed her hand, and committed a hundred extravagances of grief, whilst I tumbled upon deck to fetch Norie, whom we had left there watching the sea and quite unconscious of the thrilling drama that was enacting below.

"I say, Sir Mordaunt," exclaimed the doctor, as he bent over the unconscious woman, who lay upon the floor, with her head on Miss Tuke's lap, "this won't do. If her ladyship is to be sent into fainting fits in this fashion, I'll not answer for her life."

Sir Mordaunt made no answer, but he looked terribly grieved and upset. After the regulation quantity of slopping and slapping, Lady Brookes came to, and was carried off to her berth in state, Miss Tuke heading the procession, Sir Mordaunt and Norie holding each an arm of her ladyship, and cutting fantastic figures as they toppled to and fro upon the heaving and bounding deck, and Carey, the maid, and the unhappy captain's wife bringing up the rear.

Glad to be quit of the business, I went on deck, where I found Tripshore, with whom I had a long yarn over the incident of the morning; and when I had done with him I had the deck to myself for half an hour, though from time to time I would find myself taking a furtive squint down the skylight to see if Miss Tuke were coming my way, for I was growing sentimental enough about that girl, not only to enjoy her company, not only to relish the occasional snub she bestowed on Norie, and any half-suppressed impatience of him that she exhibited when he drew alongside of her, but even to indulge in fond and foolish dreams of the future.

If this confession, however, makes it appear that I was in love, then more is conveyed than is true. I was not in love with Ada Tuke. I was only warming up toward her. I enjoyed thinking of her, and I dwelt upon the possibility of my falling in love with her as an agreeable dream that might one day be realized. Any young fellow who has been boxed up for some weeks with a pretty girl in a vessel will understand what I mean. A man rarely falls seriously in love with a girl at sea. He plays round and round the emotion, warms himself by it, and enjoys its light; but he seldom or never burns his wings. He waits till he gets ashore to do that. The steady earth helps him to concentrate himself. At sea the tumblification keeps him diffused.

I stood for nearly a quarter of an hour watching the wake rushing away from me, full of whirling and eddying fires, into the leaping leagues of darkness, and listening to the clank and

jerking of the wheel-chains, and the booming of the wind in the hollow of the drum-like mainsail, and the crashing of waters to right and left as they soared and coiled over, and broke into wildernesses of snow under their own weight.

CHAPTER IX

BUT this fine wind did not last through the night. When I came on deck at eight o'clock next morning the wind was away in the southeast, a gentle breeze, and the swell of the sea fast going down. There was a small bark on the lee horizon, standing to the north, too far off to be of any use to us for transshipping the wrecked men. She remained in sight until after breakfast, and seeing her put it into Sir Mordaunt's head to call the three men aft and talk to them.

They presently arrived, and I was struck to see how the rest and the food had pulled them together. Sir Mordaunt at once told them that he had consented to carry Mrs. Stretton to Kingston, where she had friends; that if they liked the notion of going as far as Kingston he would convey them there, but they must decide. He would either take them to Jamaica or transfer them to the first homeward-bound ship we could signal. What was their choice?

After looking at one another and talking awhile among themselves, they replied that they would rather be put aboard some homeward-bound ship; they were strangers to Jamaica; had no idea of what chances there were of getting a ship that way; whereas at Liverpool there was a tidy bit of money for them to take up as wages and scores of vessels in want of hands.

"But we hope you'll make use of us whilst we're with you, sir," added the fellow who had acted as spokesman. "We're willing to turn-to and do any mortal thing we're put to. It worries my mates as much as it do me, sir, to know how to show ourselves grateful; for merely thanking of you, and calling blessings on you and your party, sir, don't carry the meaning in our hearts half as fur as we want it to go."

"There's no occasion for you to work," answered Sir Mordaunt. "We have plenty of men. As for gratitude, you have already thanked us enough. Your business is to take rest and recover your strength and spirits."

And so that matter ended, and the poor fellows went forward.

In obedience to Norie's injunctions, it was agreed among all us people aft not again to refer to the wreck before Lady Brookes, nor indeed to speak upon any topic in her presence that was at all likely to capsize her nerves. Norie told me in confidence that the action of her heart was weak, and that a fainting fit might end in death. "I don't want to go into the matter with her husband," said he, "for fear of distressing him: but we owe it to them both to keep her mind cheerful. And I have told Mrs. Stretton to avoid all reference to her trials as she would poison, though, poor creature! it's rather too much to expect her to look easy, with her husband drowned a few days ago, and with the memory of ninety-six hours of famine and salt-water scouring to fill up her mind."

"Is this cruise doing Lady Brookes any good, think you?" I asked.

"Certainly it is," he answered. "But hysterics and swooning have put her back."

"But it was the lightning that sent her into hysterics," said I. "We can't prevent thunder-storms from gathering."

"Why, that's true enough," said he. "But a thunder-storm isn't always happening; whereas, if I had not put you on your guard, the wreck would find you all in talk for the next fortnight, and every meal would be embellished by allusions to drowned bodies, storm-swept decks, starving men languishing to swallow their own bones, and other light and pleasing topics of that kind."

Nothing particular happened that day. Indeed, it was one of the quietest days we had passed. Lady Brookes kept her cabin, and her husband was nearly the whole time with her. I saw very little of Miss Tuke, very little of the doctor, nothing at all of Mrs. Stretton. After the thunder-storm, and the strong wind, and the excitement of the wreck, the calm weather fell like a pause upon us all; and when we met at meals I noticed an unusual gravity of manner in Sir Mordaunt and his wife and Miss Tuke, so much so that the meals that day were the dullest we had sat down to: even Norie seemed to have lost his tongue.

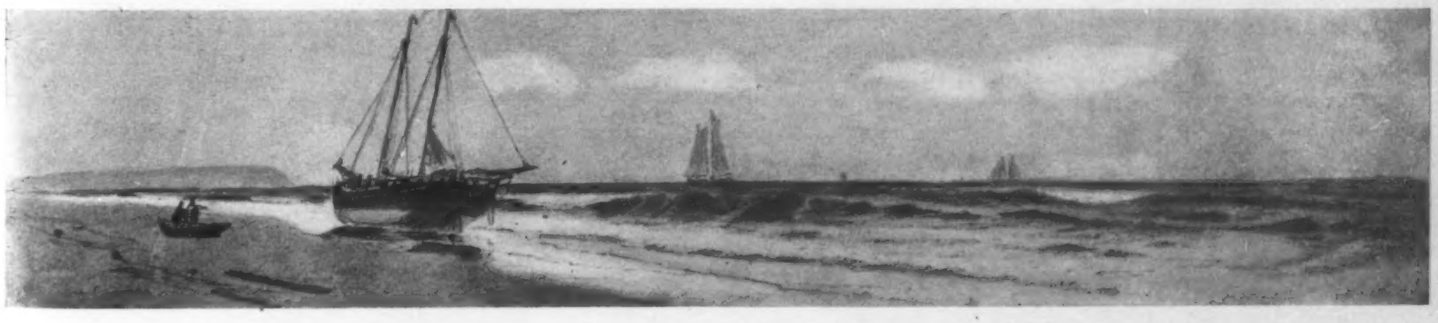
At dinner I asked what arrangements had been made for Mrs. Stretton's accommodation, and was told that she would share Carey's berth and take her meals with her.

"She said she would rather not join us here," said the baronet, "although I pressed her to give us her company. This shows a very modest, retiring character. Yet what pleases her should please us."

However, some time after, Norie told me that he had taken the young widow aside and begged her to keep as much as possible for the present out of Lady Brookes' sight—to wait until the recollection of the shipwreck should have faded out of her ladyship's mind. "You see, Walton, that though she might promise not to talk so graphically again before Lady Brookes, she might forget her vows should the conversation drift toward her sufferings and widowed and destitute condition—for I suppose you know that her husband's death leaves her penniless?—and it is my duty as medical adviser to protect Lady Brookes against all risks of further 'capsizals,' as you call them."

To all this I made no answer; but I could not help thinking he bade fair to make a fool of his patient by humoring her gimcrack nerves in this way.

(To be continued.)



How to Lay Down a Boat in the Mould Loft

BY CHARLES H. HALL

Drawings by the Author

THOSE whose visits to shipyards have been confined to attending launchings usually associate the mould loft with the luncheon served therein, and the name brings visions of elaborate spreads, midday champagne, and speeches. If they have noticed the floor of the room at all, it has been to wonder idly at the network of lines drawn thereon. Those whose acquaintance with ship and boat-building establishments covers work-a-day conditions realize that the mould loft is the next step from the draughting room in the development of the floating fabric. The loft is, in fact, an enlarged drawing board, where the vessel with all its members is "laid down," or drawn full-size. Every frame of a steel vessel is here drawn, with its floor plate, reverse bar and beams, and "moulds" (light wooden patterns) made, which show the curvature and bevel of each member, with rivet holes, plate edges, etc.—all the information that the ironworkers need to get out the parts and assemble them. In the construction of a wooden boat the loft work is simpler. The average amateur builder, when building a boat himself, especially for the first time, finds a good deal of difficulty in understanding how to lay the boat down and transfer the lines which he has received from the designer onto the floor in such a way that he can get out his moulds and frames. In many articles on how to build a boat this part of the work is dismissed with a few hasty sentences, on the supposition that the average amateur knows how to lay down the lines. In the following article I have tried to describe, as clearly as possible for the man who builds his own boat, the best methods of doing this work. It is not difficult, only it is hard to understand, and I have endeavored to cover every point that might arise to cause confusion or trouble.

For a commercial vessel, every frame is laid down and moulds made; but for yachts and small craft generally the moulds are used to set up on the keel in specified positions, ribbands are run outside of them, and the frames fitted to these ribbands. These moulds, therefore, must be fairly stout to resist the pull or thrust of the ribbands. Lighter moulds are made for trimming the stem, sternpost and deadwood, and these have on them the rabbet and bearding lines. The station moulds should be ⅞ inch thick for a boat up to 25 or 30 feet long, 1¼-inch from this length to 40 or 45 feet, and so on. They need not be of clear lumber, but should have one side dressed, so that pencil marks will show plainly.

The amount of work to be done in laying down a boat and the size of loft necessary depend on the previous work of the draughtsman. If the drawings have been made on a large scale and the lines faired with care, there may be no need of further fairing on the floor. The writer knows of cases where the lines have been taken off a model, faired by a careful draughtsman on a scale of 1 inch to 1 foot, and the body plan and enough of the ends laid down to make stem and stern moulds. The builder said that the vessels were absolutely fair, and that he had no "dubbing" to do. A steam yacht drawn on ½-inch scale was reported as "not a quarter of an inch out anywhere." On the other hand, a slovenly drawing or carelessly measured offsets will cause much extra work in laying down.

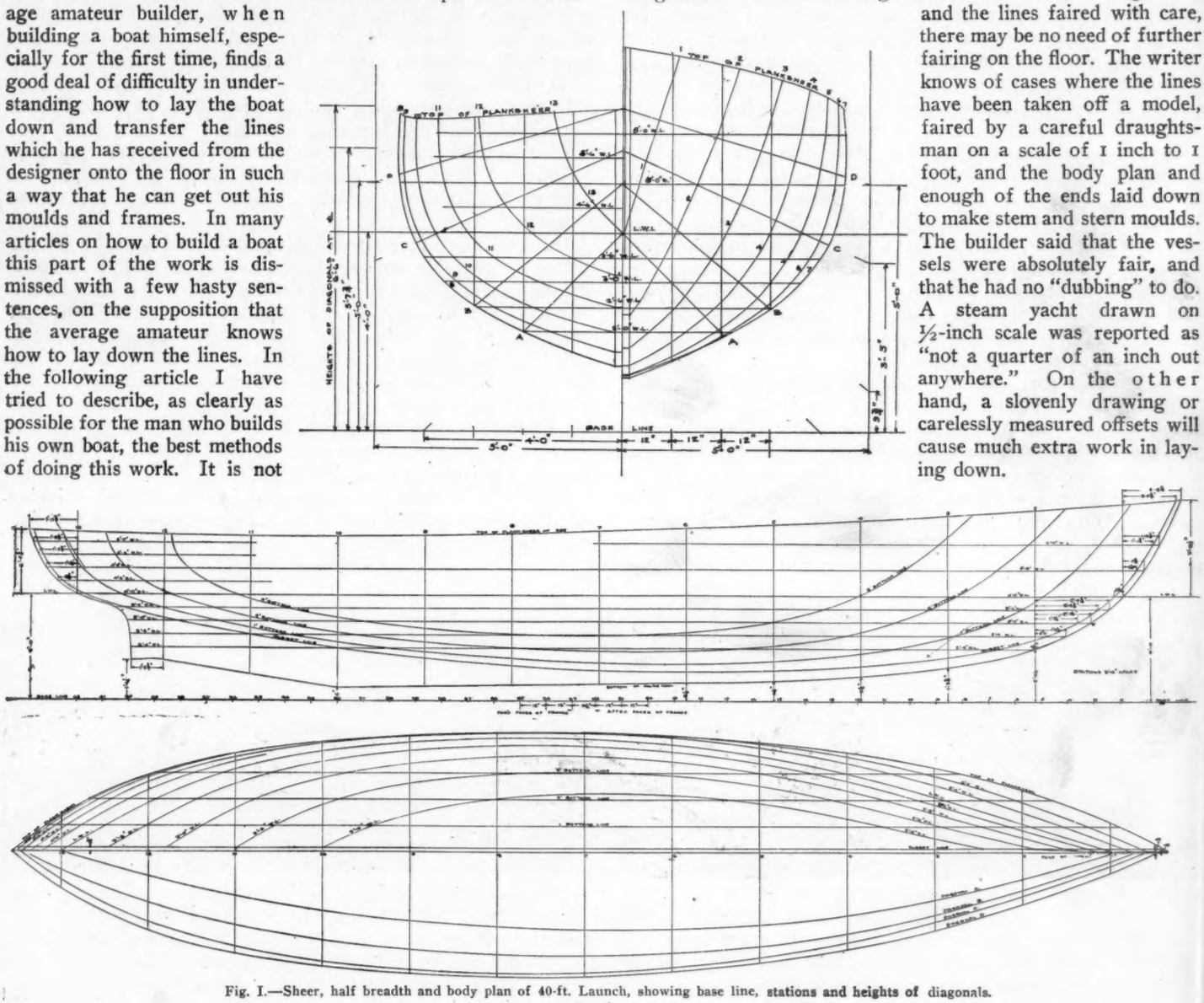


Fig. I.—Sheer, half breadth and body plan of 40-ft. Launch, showing base line, stations and heights of diagonals.

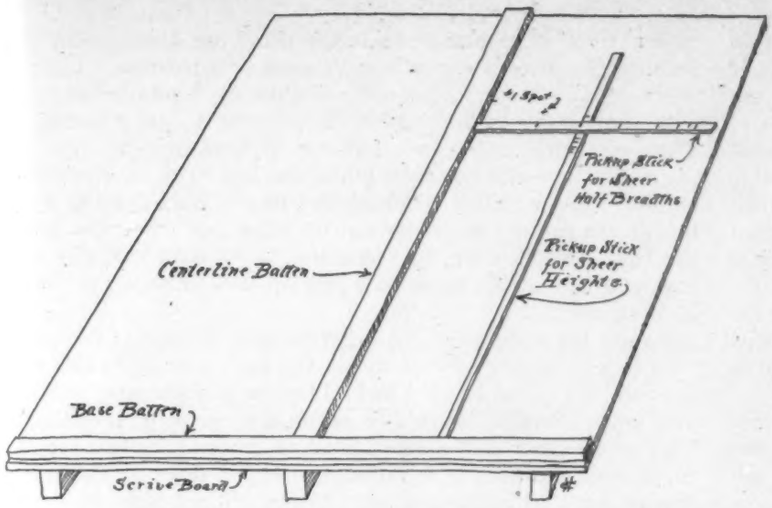


Fig. II.—The scrive board. Laying down the spots for forebody sheer lines. Pick-up stick shown at right.

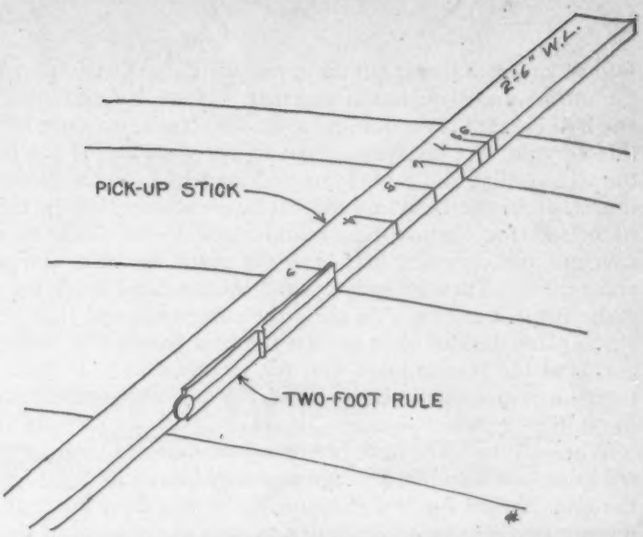


Fig. III.—Picking up half breadths from the floor with the pick-up stick. Showing how to square up with the end of a rule.

As a general rule, steel vessels must be absolutely fair on the floor, while slight discrepancies in a wooden boat are of little importance. Indeed, when a wooden boat has the moulds set up and the ribbands run the designer often goes all over her, padding a mould here, letting in a ribband there, until the form, as a whole, meets his approval. In this case refinements of accuracy on the floor would be out of place.

For the sake of illustration, let us assume that we are to lay down the 40-foot waterline launch here illustrated and fair it on the floor. The designer furnishes a drawing of the lines of the boat, which show its form, and a Table of Offsets, which give the necessary dimensions and supplements the lines. The Offset Table is simply the lines reduced to figures. The boat is 44 feet 1½ inches long over all and 9 feet beam, so that we should have a loft some 50 feet long to lay her down properly. The floor should be level, dry and well lighted. The flooring must be securely nailed, and should not have wide joints nor be of very wide plank. Sometimes a coat of white paint makes the lines clearer, but this is not necessary if the floor be *clean*. To lay down the Body Plan a special board is advisable large enough to take in the base line and outside lines shown (see Fig. 1). In this case a board 8 feet by 10 feet 6 inches will answer. This should be made of narrow stuff, 3 inches wide and ⅞-inch thick, or less, if desired. This is called the *scrive board*.

A foot or so from one side of the floor and running for at least 45 feet nail down the *base batten*, of ⅞-inch by 4-inch or 3-inch pine. This must be absolutely straight, and should not be finally secured until it has been carefully sighted from both ends and checked with a chalk line. In first putting it down, drive the nails through the batten and only a little way into the floor, so that any part may be shifted by pulling the nail out of the floor and tapping the batten with a hammer. The batten must be of clear pine, planed on all four sides, and have its working edge square. Use wire nails. If the loft is long enough, leave room for the scrive board clear of the sheer plan, and do not put the base batten too near the side wall.

The boat is 40 feet waterline and the lines show thirteen stations, Nos. 1 and 13 at the ends of the waterline, so that these stations divide the waterline into twelve parts, and are, therefore, $\frac{40'}{12} = 3\ 1/3' = 3'\ 4''$ apart. In laying off the points for these stations do not measure from one to the next, except as a check, but use a steel tape and lay them all out from one point; thus, 3 feet 4 inches, 6 feet 8 inches, 10 feet, 13 feet 4 inches, sixteen feet 8 inches, 20 feet, and so on.

Draw on the floor these thirteen station lines 3 feet 4 inches apart, perpendicular to the base batten and 8 feet long, and number them plainly at each end to correspond with the drawing. They may be "snapped on" the floor with a chalk line and then ruled in with straight edge and carpenter's pencil. Now measure up from the base line (which is the "upper" or working edge of the base batten) and mark the heights of the different waterlines shown in drawing, 2′, 2′ 6″, 3′, and so on. These should be run in for the entire length and numbered at intervals. As the half-breadth plan is usually laid down with its center line corresponding to the base line of the sheer plan, run in the buttock or section lines, some of which will be identical with the waterlines. Number these also—thus, 3-foot Sect., 3-foot W. L., and so on.

Now turn to the scrive board. Along one of the 10-foot edges secure a base batten of ⅞-inch by 3-inch stuff, and through the middle of the board, at right angles to this, secure another one of the same size, taking the greatest care that these battens are accurately straight and at right angles to each other. The one along the edge is the base batten and its working edge the base line, thus corresponding to that on the floor. The other is the center-line batten, and *each face* must be straight, that on the right-hand side (looking from the base line) forming the center line for the forebody and that on the left forming the center line for the afterbody. These edges thus correspond to the center line of the half-breadth plan on the floor, which, as we have seen, is formed by the working edge of the base batten. Now draw in on the board the waterlines and section lines, numbering each one, and we are ready for business.

For drawing the various curved lines we will need a supply of battens of various lengths and sizes, according to the "quickness" of the curves to which they are to be bent. They may be of uniform section or tapered toward the ends, and should be of clear, dry, straight-grained white pine. They must be planed on all four sides, and with edges square and sharp. The sheer batten is the largest and stiffest of the lot, being in this case 50 feet long and about ⅞-inch by 3-inch, or even heavier. The next size will be used for waterlines, and will be lighter, and so on down to the little ones used for the body plan, which are only ⅜-inch square. The large battens are laid on the flat and secured by wire nails driven through them (but not all the way up to the head), and the light ones by nails alongside of them or fine brads through them. Besides these battens we will need a few "pick-up sticks," about 8 feet long and ⅜-inch by 1-inch section. A 10-foot rule, divided into feet, inches and eighths, is handy; but the steel tape may be used, or a stick divided into feet, using the common 2-foot rule for the inches and fractions.

If the boat is to be faired on the floor, it may be well to lay down the sheer and half-breadth plans first, and to derive the

Body Plan from them; but the three plans may be laid down from the offsets and then faired together. If we lay down the sheer and half breadth plans first, go to Station No. 1, measure out from this forward the distances given on the drawing of the lines to the stem outline and rabbet line and mark the spots. Now measure up from the base line the various heights given in the table of offsets for Station No. 1 and mark them. You may then measure the different half-breadths given for that station and mark them. Then go to No. 2 and measure and mark the points given for that station. In using the rule or marked stick be careful to plant the end of it against the base batten and see that the end is at the station mark and not to one side of it, as the distances measured will not be correct if the rule is at an angle to the station.

When all the spots have been marked, take the large sheer batten and place it so that its edge at the middle of its length touches the spot marked for it on Station No. 7 and drive a nail through it; then set the edge of the batten to each of the spots of the sheer in succession, nailing it at each. Set the batten so that its lower edge coincides with the spots (considering *up* to mean away from the base batten, the base line being at the bottom of the drawing). Now go to one end and sight the lower edge of the batten. There may be lumps and flat spots in it, which must be faired out. Where there is a "lump" or "hard spot," draw the nail and the batten will usually spring a little towards fairness. If alternate nails be drawn, the bottom will spring here and there and be much fairer. Do not leave the ends of the batten free, but bend them to the same curvature as the rest of it.

The best way to fair a curve is to stand beyond the end of the batten and have an assistant draw the nails and tap the batten in or out until your eye is satisfied. Then, when it looks all right from one end, go to the other end and sight it carefully. By stooping over or squatting down to bring the eye near the floor, the "humps and hollows" become more evident. All this fairing should be done with great care, and really requires some experience, as the novice seldom has "a good eye," and is apt to stick too closely to the spots. On the other hand, if you cut loose entirely from the spots the effect desired by the designer will be lost, and you may get a sheer line that will disappoint you when the boat is in the water. Occasionally you will find a spot that is evidently "out," as mistakes of a foot, or of 3 or 6 inches, sometimes of 1 inch, are more apt to occur in making the offset table than an error of an eighth of an inch. Such spots usually show clearly what the error is.

When the sheer line is faired, take off the heights for transfer to the Body Plan. Use one of the pick-up sticks for this. Mark it plainly "sheer heights from base," and mark the top and bottom. Go to the extreme bow, put the end against the base batten the same distance forward of No. 1 that the stem head is, and mark on it the sheer line at the stem head on its narrow face, squaring up with the end of the 2-foot rule, extending the line partly across the wide face and marking it "stem." Then take the stick to No. 1 and mark the line and number it, and so on to the after end. If the spots in the afterbody come too close to the forebody spots, turn the stick over and use the other side for the afterbody, or rather for that part of it where the sheer line rises, as the low point of the sheer is almost always abaft of amidships. Lay the sheer stick aside for the present and shift the batten to the deck-edge spots in the Half-Breadth Plan, or use a lighter batten, as the sheer batten may prove too stiff to bend properly. In the plans used herewith the sheer line is marked "Top of Plankshеer at Side," but is called "Plankshеer" in the Half-Breadth Plan, though the two are projections of the same line. Fair the line in the Half-Breadth Plan, or "regulate" it, as some call this process, and take off the spots on a pick-up stick, marking it "Sheer Half Breadths."

To get the endings of the different lines in the Half-Breadth Plan it will be necessary to run in the keel, stem and stern outlines and the rabbet line. The keel bottom is made up of straight lines and a curve, and should be run in first, snapping the straight lines on the floor with a chalk line and using a batten for the curved portion, letting it lap over two or three spots on the straight part. Possibly the same batten will not bend the gentle curve from No. 3 to No. 5 and the quicker turn of the forefoot, and you may have to run it in in two parts, using a stiff batten for the easy curve and a lighter one for the quicker turn. A tapered batten will be useful here, but the taper should be uniform and not sudden. Keep the batten above the line—that is, on the concave side—so that you may sight the convex edge, as it is easier to get a smooth curve in this way.

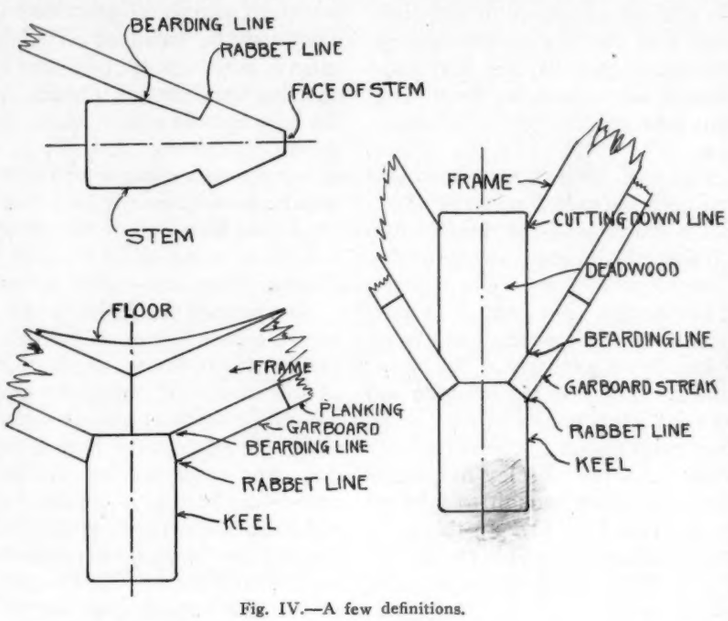


Fig. IV.—A few definitions.

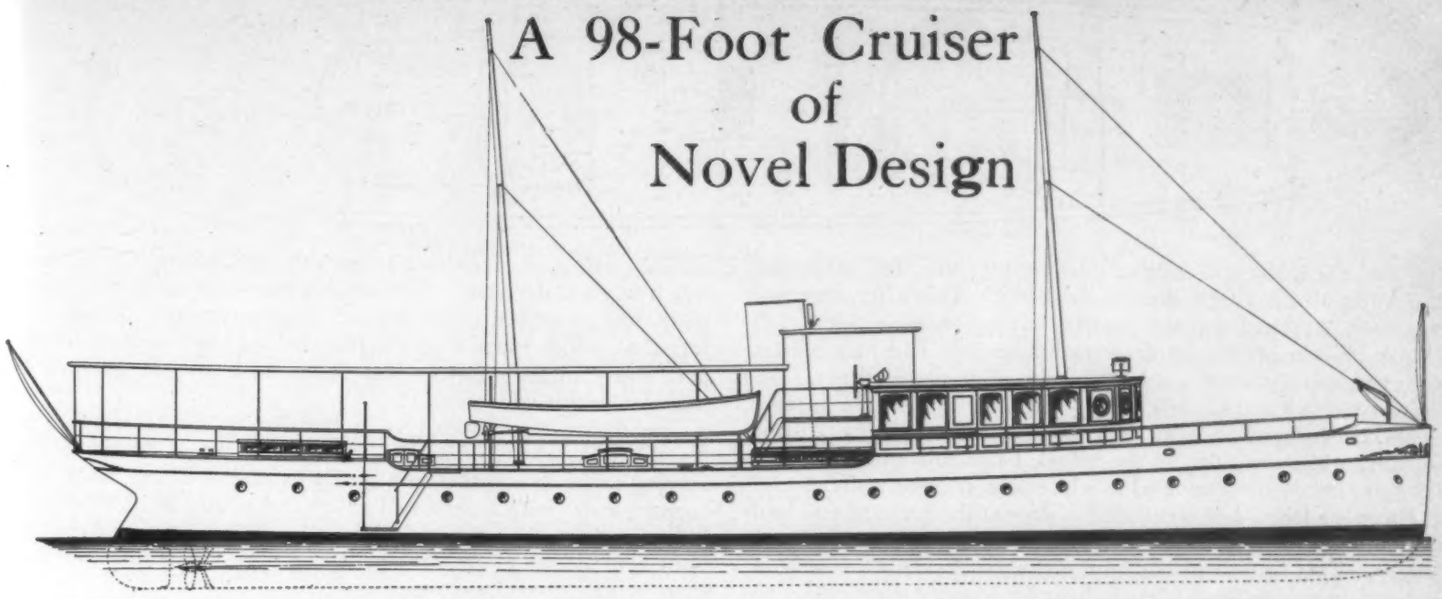
Now run in the rabbet line in the Sheer Plan from Station 2 to Station 12, marking all the spots, however, on the waterlines at the ends. The rabbet at the ends will be marked later, when the waterlines are all drawn. Now, using a short stick, measure the distance from No. 1 station to the face of stem at sheer line and transfer it to the Half-Breadth Plan, laying the stick along the edge of the base batten. The stem is bearded off to a face only 1 inch wide, so mark a point ½ inch out from the center line (base batten) and the proper distance from No. 1 Station. This will be the ending for the deck line. Transfer the points where the stem crosses each waterline in the same way. As the stern is bearded off to a sharp edge, the deck line and waterlines aft will end on the center line, the points of ending being transferred from Sheer to Half-Breadth Plans, as indicated for the stem.

Now, as the stem, keel, deadwood and stern timber are all sided the same (3½ inches), the projection of the rabbet line in the Half-Breadth and Body Plans will be a straight line parallel to the center line and distant from it the half siding, 1¾ inches. Draw a line 1¾ inches from the center in each of the two plans. Later, when all the waterlines are drawn, the point where each waterline crosses the "*side line*" just drawn must be transferred to the projection of the same waterline in the Sheer Plan and will be a point on the projection of the rabbet line in the Sheer Plan. (The shaft log and its boss will be taken up further on.)

When the sheer line is faired in both Sheer and Half-Breadth Plans it may be laid down in the Body Plan. This part of the work, as well as taking off the plank and making the moulds, will be described in the next installment of this article.

(To be continued.)

A 98-Foot Cruiser of Novel Design



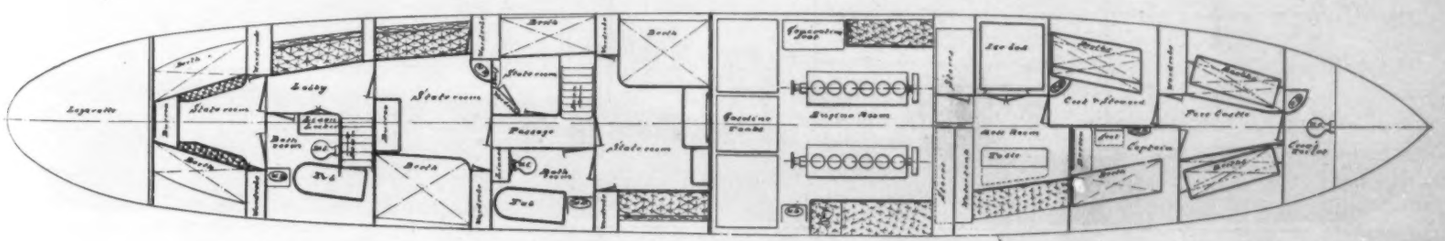
A LARGE cruising motor boat that will, when completed, attract considerable attention by reason of her novel design and the great amount of accommodations available for owner and guests, has recently been designed by Messrs. Cox & Stevens, of New York City, and the contract placed for delivery in the spring. This vessel is for a Western yachtsman, who intends to start on an extended Southern cruise in the boat in the latter part of the coming summer.

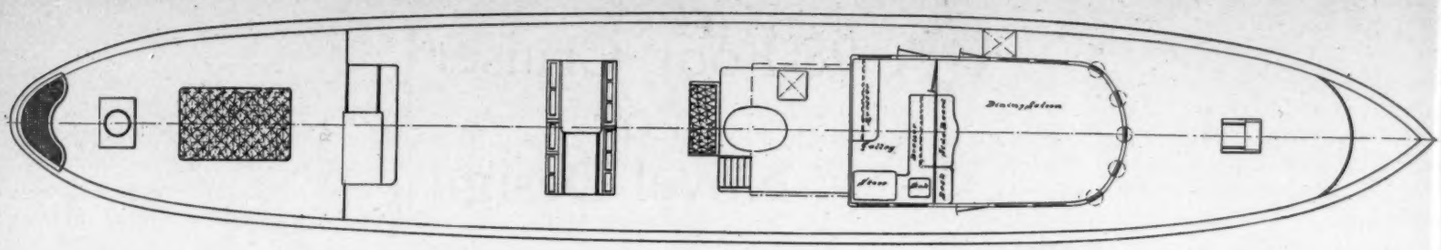
The principal dimensions of this vessel are: Length over all, 98 feet; beam, 16 feet; draft, 4 feet, it being the aim to produce the maximum size of vessel to pass through the locks and under the bridges of the Erie Canal, the height of the house being also arranged with this in view. In type, the vessel is a small steamer, being flush decked throughout with the freeboard forward and aft raised, as in the case of Viator and other similar vessels by the same designers. With the plumb stem, full deck line forward associated with flaring sections, the elliptical stern aft, which permits of an extremely full deck line at this point and works down into the steamship type of underbody (thus getting the greatest possible waterline length for over-all length), this craft will present a very workmanlike and pleasing appearance.

The motive power consists of two 6-cylinder, 100 horsepower gasolene motors of the air-starting, reversible type, contained in a central compartment separated from the rest of the vessel by watertight steel bulkheads, this compartment also containing the gasolene tanks, which are of copper, three in number, with a total capacity of 1,500 gallons. A large electric generating set, driven by an independent gasolene motor, which drives an air compressor and fire and bilge pump, is also in this compartment. This engine room is large, roomy and well ventilated, and contains the bunks and lockers of the engineer and his assistant. The designers, having appreciated from their former experience the absolute necessity of having perfect ventilation and entire accessibility for repair and inspection of the tanks and machinery, have paid special attention to this feature. A trunk hatch has been worked over the engine space, extending from the after-end of the deck house, this trunk having ventilating windows on all sides and a ventilating stack leading from the after part of the roof. The top of this trunk is so arranged as to be portable for its entire length, and when removed with the stack leaves an opening of sufficient size to permit either engine or gasolene tanks to be hoisted out easily.

The hull is to be built of wood, this being more suitable than steel for Southern cruising, where this craft will, for the most part, be used. The keel and the keelson, which are unusually heavy, are of white oak, as are also the timbers, which are double-sawn and of very heavy section, and provide, with the five watertight bulkheads, a very rigid transverse construction. The planking will be of selected long-leaf yellow pine. The outside of the deck house will be of selected teak, handsomely paneled, and the boats, of which there are two—one a 21-foot launch, the other a 16-foot dinghy—will be of teak trim, their planking being white cedar. The navigating bridge extends across the ship just abaft of the deck house, and is in the form of a teak grating with awning overhead, the space between the bridge and the trunk over the engine room being utilized for gravity tanks for the sanitary fresh-water system.

The accommodation for the owner and guests are all abaft of the engine space, which, however, is not so far forward of the center of length as to interfere with placing the fuel supply over the center of buoyancy of the vessel, a most desirable arrangement, obviating, as it does, change of trim with change in fuel supply. In order to use to advantage the large amount of space available for quarters aft, the designers decided upon the use of two companionways from the deck. One of these is on the starboard side, abreast of the companion ladder, and leads directly down into a lobby on the port side of the ship, which is attractively arranged with a full-length transom sofa that can be used as a berth, if desired. This lobby has also a gun rack, bookshelf and large hanging locker. Opposite this lobby, on the starboard side, is a large bathroom with tiled floor, having in it porcelain tub and lavatory, medicine locker, etc. This bathroom has one door open-





ing into the lobby and another opening into the after stateroom, this latter also having a door to the lobby. This after stateroom has been arranged for two guests, having on each side a full-length built-in berth with drawers underneath, and at the after-end, between the berths, a bureau with plate-glass mirror. The finish of all quarters below, aft, is in Colonial style, the bureaus, doors, berth fronts, and all articles of furniture being of mahogany, while the sides of the vessel, bulkheads and deck overhead are handsomely paneled in white pine, painted white.

From the lobby just mentioned a door at the forward end leads into another stateroom, the full width of the vessel and 9 feet in length. This stateroom has on the starboard side a 4-foot built-in berth, with drawers underneath, and a hanging wardrobe. On the port side is an extension transom, which can be used as a berth, if desired, or as a sofa. Against the after bulkhead of this room is a large bureau, with plate-glass mirror, and having, as have all the bureaus in the vessel, a sheet of plate-glass placed on its top, so that the polished surface will not be marred by the toilet articles. This stateroom has another door in the forward bulkhead opening into a passage which leads, at its forward end, into another 9-foot stateroom, the full width of the vessel, and having on its starboard side a large bathroom, and on the opposite side a single stateroom. Between this room and the double stateroom just described is the second companionway, already referred to, which starts from the passage and lands on deck on the port side. In the quarters just described it will be possible to sleep ten people with comfort.

The dining-room, which is in the deck house, is 12 feet in length in the clear, of ample breadth, has large sideboard and serving table, in addition to a round extension dining table, and communicates with a combined galley and pantry at its after-end, it having been thought advisable on account of the heat of the Southern climate to keep the galley on deck. The finish of this room is mahogany, handsomely paneled.

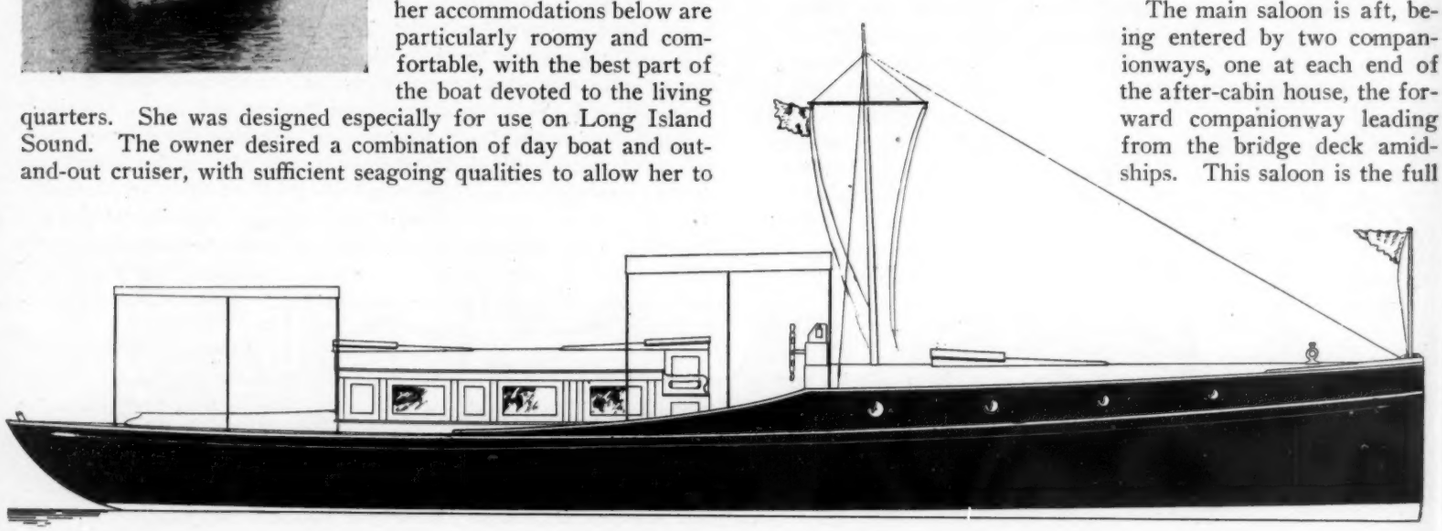
Below decks, forward of the engine room, comfortable quarters have been laid out for the crew, and ample storage space has been provided for fresh water and regular stores. The galley communicates with this portion of the vessel by a dumbwaiter, and also by a hatch, through which provisions can be passed from the storerooms below. The captain has a separate stateroom, as have the cook and steward, while the forecastle proper contains berths for four men.

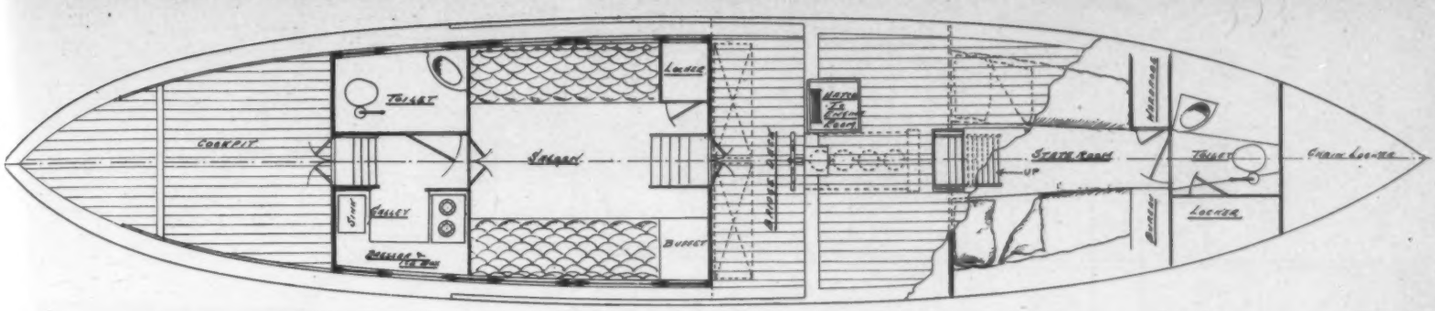
A 50-Foot Combination Day Boat and Cruiser

WE publish herewith the outboard profile, accommodation and construction plans and photographs of the smart 50-foot cruiser Santee, recently designed and built by the Luders Marine Construction Company, of Portchester, N. Y. The boat has a particularly neat and fine-lined appearance, indicating more than the average speed to be found in cruisers of this size, and her accommodations below are particularly roomy and comfortable, with the best part of the boat devoted to the living quarters. She was designed especially for use on Long Island Sound. The owner desired a combination of day boat and out-and-out cruiser, with sufficient seagoing qualities to allow her to take anything in the way of weather that might turn up on Long Island Sound or along the coast.

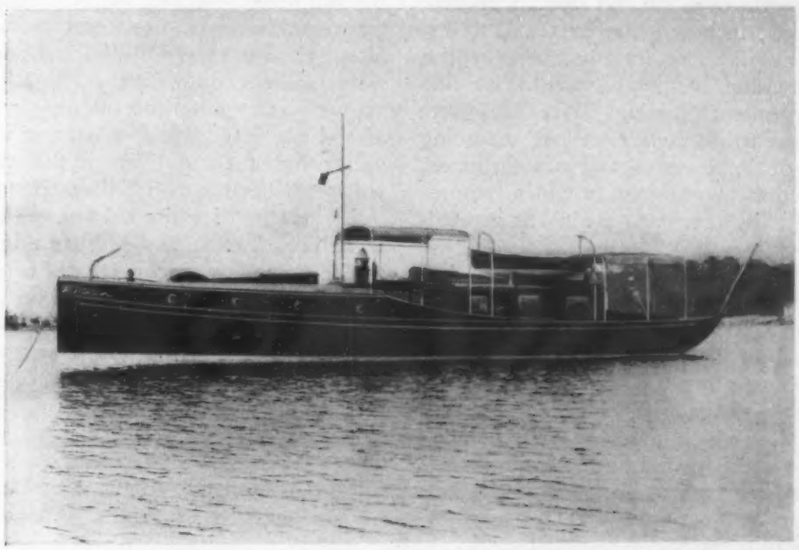
The principal dimensions of Santee are: Length over all, 50 feet; length waterline, 45 feet 3 inches; extreme beam, 10 feet; draft of water, 3½ feet. The construction, while light, is very strong, and the boat can be driven at a sustained speed of 10½ knots under any ordinary conditions of wind and weather. The finish of the after-quarters is in solid mahogany throughout, while the forward stateroom and toilet room are in white enamel with mahogany trim. Running water is supplied to both toilet rooms, which have all the usual fixtures. The accommodation plan, as laid out, has the advantage of two distinct cabins, a feature that will be appreciated if one is doing any extended cruising when there are ladies aboard.

The main saloon is aft, being entered by two companionways, one at each end of the after-cabin house, the forward companionway leading from the bridge deck amidships. This saloon is the full





width of the boat, giving good floor space, and has upholstered transom berths on either side. Forward of the port transom is a full-length hanging clothes locker, while opposite, on the starboard side, is a buffet. Swinging doors from the after-end of this saloon lead into a passageway 4½ feet long, at the after-end of which a companionway leads to the cockpit, aft. On the port side of this passageway is a large toilet room, and on the starboard side a galley, with a two-hole stove, sink, dresser and ice box. The entrance to the forward stateroom is by a companionway in the center of the forward raised deck. This stateroom is entirely separated from the engine room by a bulkhead, and contains a built-in bed on either side, and has a large wardrobe and bureau. A door leads from this room to the toilet room, further forward, in which is a large linen locker. Still further forward is a chain locker.



The engine room is amidships, thus getting the weights where they properly belong, and is located partly under the bridge deck and partly under the after-end of the raised deck, thus insuring light, ventilation and full headroom. A small hatch to the engine room leads from the after-end of the raised deck close to the steering wheel. The gasolene tanks, of 200 gallons capacity, are located under the bridge deck, just aft of the engine, thus occupying space that would be of little use for any other purpose, owing to its limited headroom. In this engine room is a pipe berth for the crew. There is also in this engine room an electric generator driven by the main engine, operating a 20-volt Tungsten outfit for electric lighting purposes. Light and air are furnished to the after-cabin by large plate-glass windows, while the forward cabin has swinging ports on either side and a skylight on the forward raised deck.

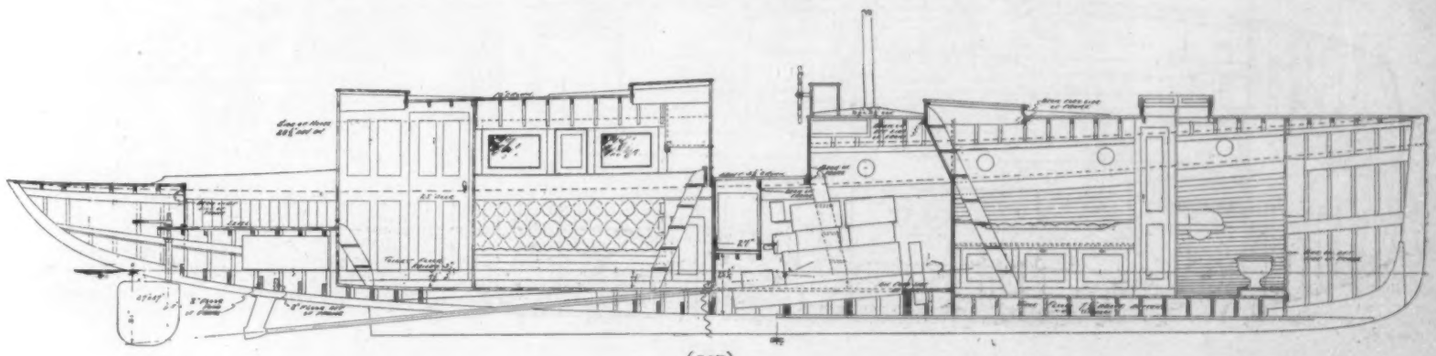
The cockpit, aft, is watertight, and is left free for wicker chairs. Over this cockpit is an awning on stanchions. The bridge deck extends amidships, and here is found a settee against the forward end of the after-cabin, while the steering wheel and engine control are placed against the after-bulkhead of the forward cabin. An awning on stanchions also covers this deck. The after-cockpit makes a most desirable place for lounging when the wind is so strong as to make the water fly and the bridgs deck seems uninviting.

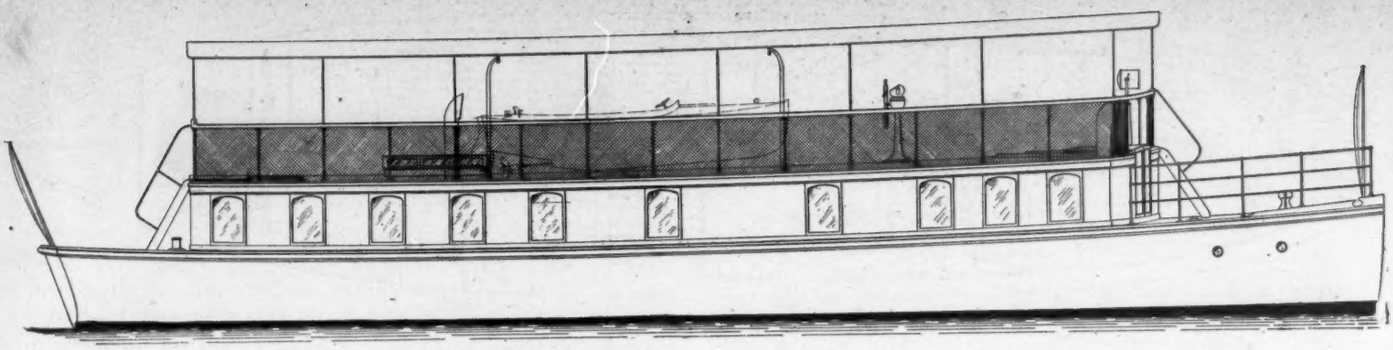
In construction, the boat has an oak frame throughout, while the planking is of cedar. The flaring bow, which is shown in the photograph, has more than proved its worth in a seaway, for Long Island Sound can swing up quite a sea in an easterly blow. There is a single pole mast, with a yard for signaling purposes.

The boat has a straight bow, with considerable flam at the deck line and a flat floor, carried well forward. She has a sharp, compromise stern with considerable overhang, which adds to her appearance, giving the impression of speed. There is a good freeboard forward, and the entire outboard profile is well proportioned and pleasing in appearance.

The keel proper ends some three-quarters of her length from the bow, at which point the shaft comes out through the deadwood, being held in place by a bronze strut just forward of the propeller.

A craft of this type is particularly useful to one desiring a cruiser of more than average speed for use in daily runs, the speed not being obtained at the expense of cabin accommodations, as is so often the case in out-and-out day boats, in which everything is sacrificed to the engine, and the accommodations are necessarily very limited. The cruising radius of a boat of this type is much greater than that of a regular type of day boat, and yet she has sufficient speed to allow her to be used for ferry purposes when desired.





A 70-Foot Light-Draft Cruiser for the Great Lakes

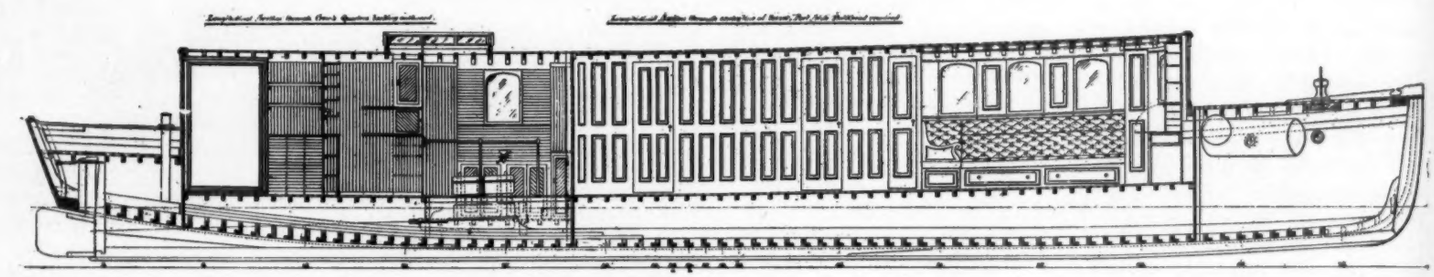
THE rapidly-growing fleet of power yachts on the Great Lakes will be increased this season by the addition of a new craft for Mr. Egbert H. Gold, of Chicago, Ill. The plans and specifications of this boat were prepared by Gielow & Orr, of New York City, and the vessel is now under construction, the hull being planked and the joiner work well in hand. Her principal dimensions are: Length over all, 69 feet 8 inches; length on load waterline, 67 feet 7 inches; beam, extreme, 16 feet 10 inches, and 2 feet 8 inches draft. The draft has been kept at a minimum, as it is the intention of the owner to go into shoal waters where there is excellent gunning. Her lines have been so modeled, however, as to produce excellent sea-going qualities. This combination of light draft and seaworthiness has necessitated the introduction of two tunnels, in which the propellers work, and so arranged that, in case of the boat's grounding, the propellers will escape injury.

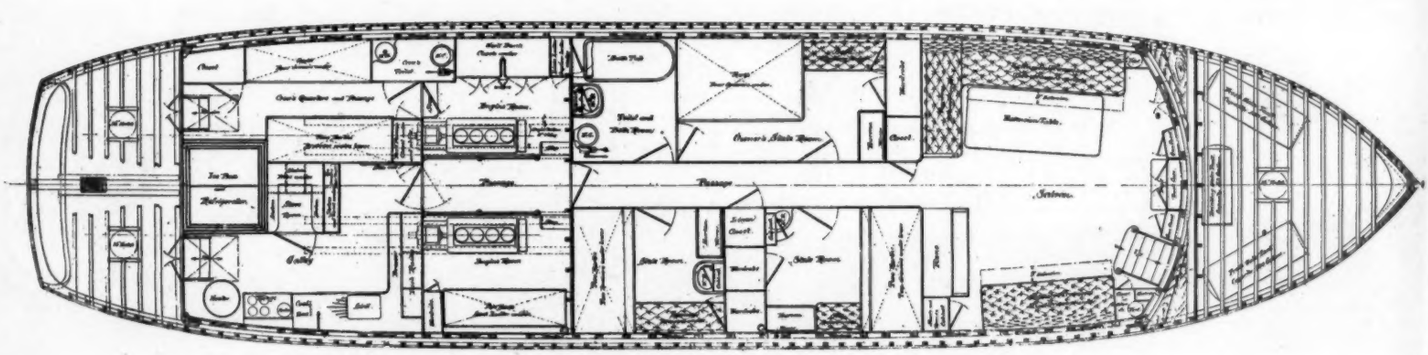
The lines show an easy form, with the floor carried well forward and aft, giving seaworthiness as well as liberal interior accommodations. Exceptional structural strength has been obtained by carrying up the sides of the hull for a distance of 50 feet fore and aft of amidships, thus forming a flush-deck vessel with nearly 7 feet headroom in the clear. Instead of circular air ports, rectangular windows are provided, which, together with skylights and ventilating cowls, will give excellent light and ventilation.

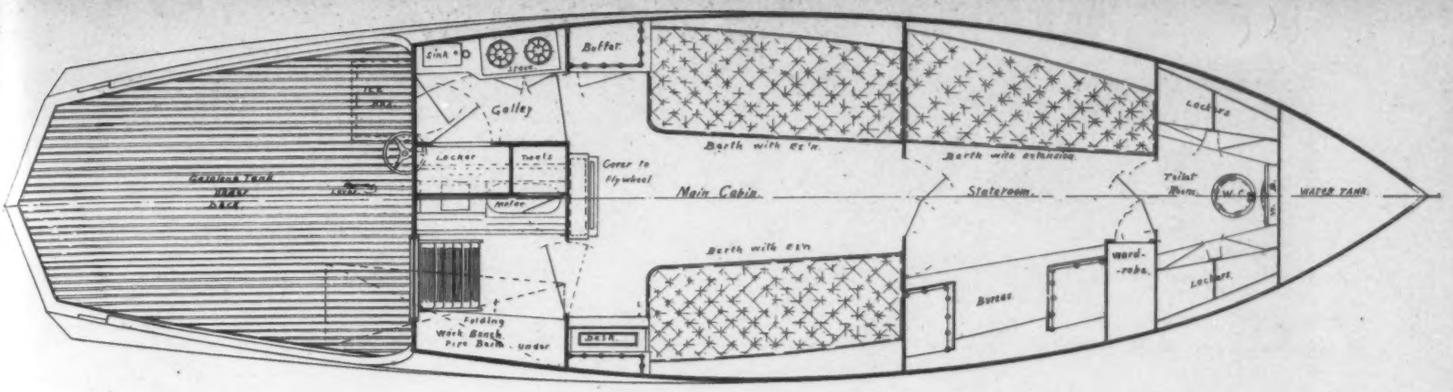
As the boat is intended for long cruises, the accommodations have been arranged especially with this in view, and liberal living quarters, with ample closet and locker space, have been provided. The main cabin, or saloon, is at the forward end of the boat, is 13 feet long, extending the full width of vessel, and is fitted with divans, desk, piano, music cabinet, gun cases, etc. The space immediately abaft of the saloon, 17 feet fore and aft and the full width of vessel, will be taken up by the owner's stateroom, bathroom and two guests' staterooms, each of these rooms being fitted with berths, divans, bureaus, wash-basins with hot and cold water and open plumbing. The 19 feet next aft will contain the engine room, galley and the quarters for the crew, all being furnished and fitted in the latest and most approved manner. The berths, bureaus and divans in the staterooms and the main saloon will be finished in polished mahogany, and the balance of the interior will be of white enamel. The skylights and deck fixtures will all be of mahogany, finished bright.

The propelling machinery will consist of a pair of four-cylinder motors, developing 40 horsepower, with Tobin bronze shafts and manganese bronze propellers. The gasolene tanks will be forward under the main deck, with gravity feed to motors. Water tanks are cylindrical and fitted to receive air pressure, so as to supply running water throughout the boat. The vessel will be steam-heated and lighted by electricity.

It is expected that the boat will be completed and ready to go in commission by the 20th of May, 1911.

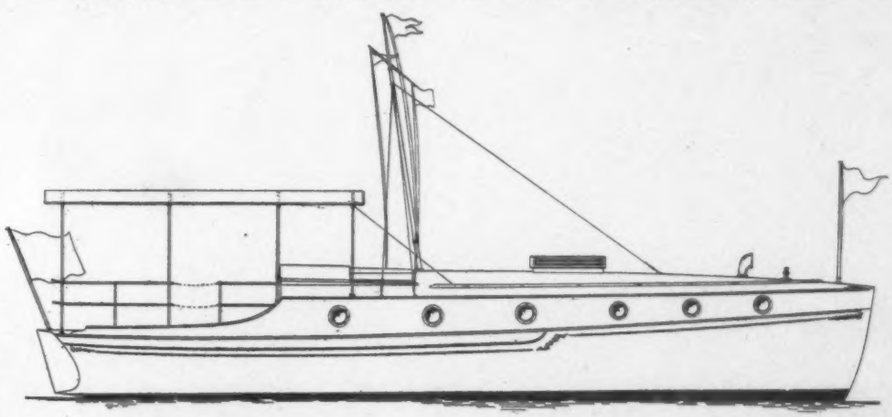






An Able and Roomy 35-Foot Cruiser

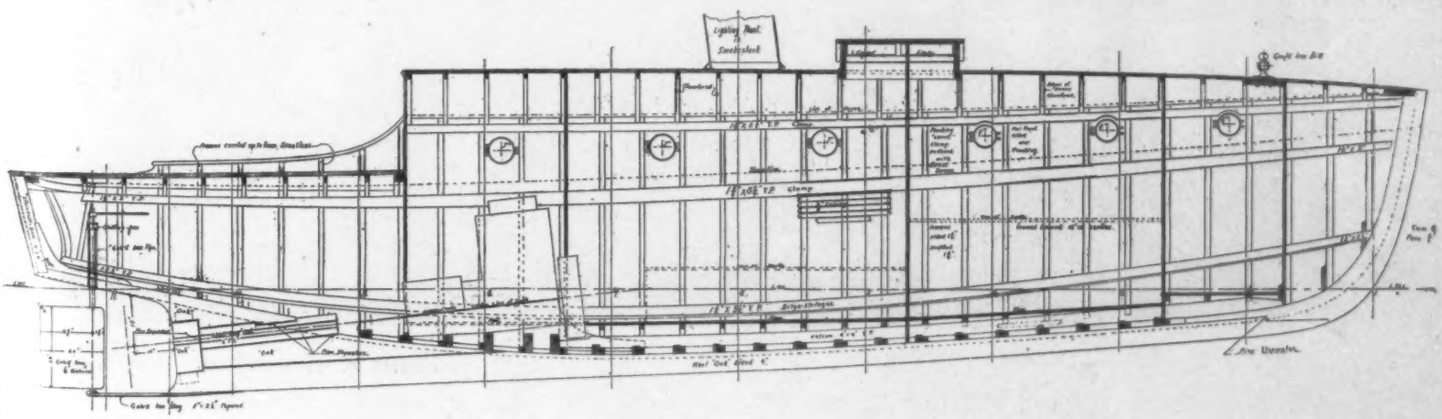
PROBABLY the handiest and most economical power cruisers that have been evolved since the internal-combustion engine began to play an important part in pleasure-boat construction are those from 30 to 40 feet in length, boats of this size being large enough to afford comfortable cruising and living accommodations and, at the same time, not being too large to be handled by the owner himself, or, at the most, with one paid hand. For this reason the plans of the 35-footer shown herewith, from designs by Mr. R. M. Haddock, of New Rochelle, N. Y., should prove of particular interest, the boat being a thoroughly wholesome and seaworthy craft, with an unusually large amount of room, both on deck and below, for one of her size.

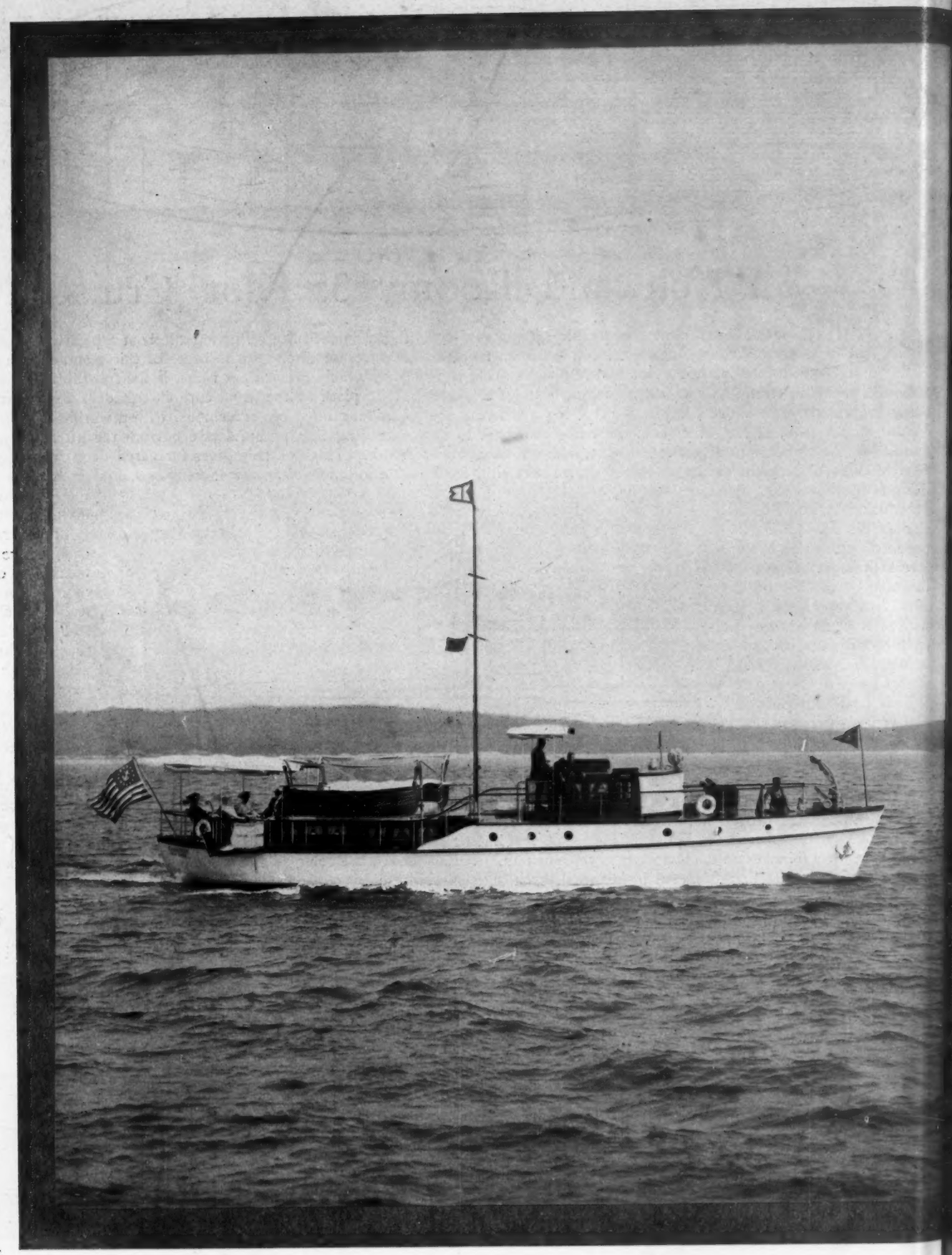


This boat was built two years ago for Mr. P. E. Fausler, of Noroton, Conn., and since being launched she has had a thorough trying out at sea under the most adverse conditions, and has proved herself exceptionally able and seaworthy. Her dimensions are the following: 35 feet in length over all; 31 feet 6 inches on the waterline; over-all beam, 9 feet 6 inches; beam at waterline, 8 feet 9 inches, and draft, extreme, 2 feet 8 inches.

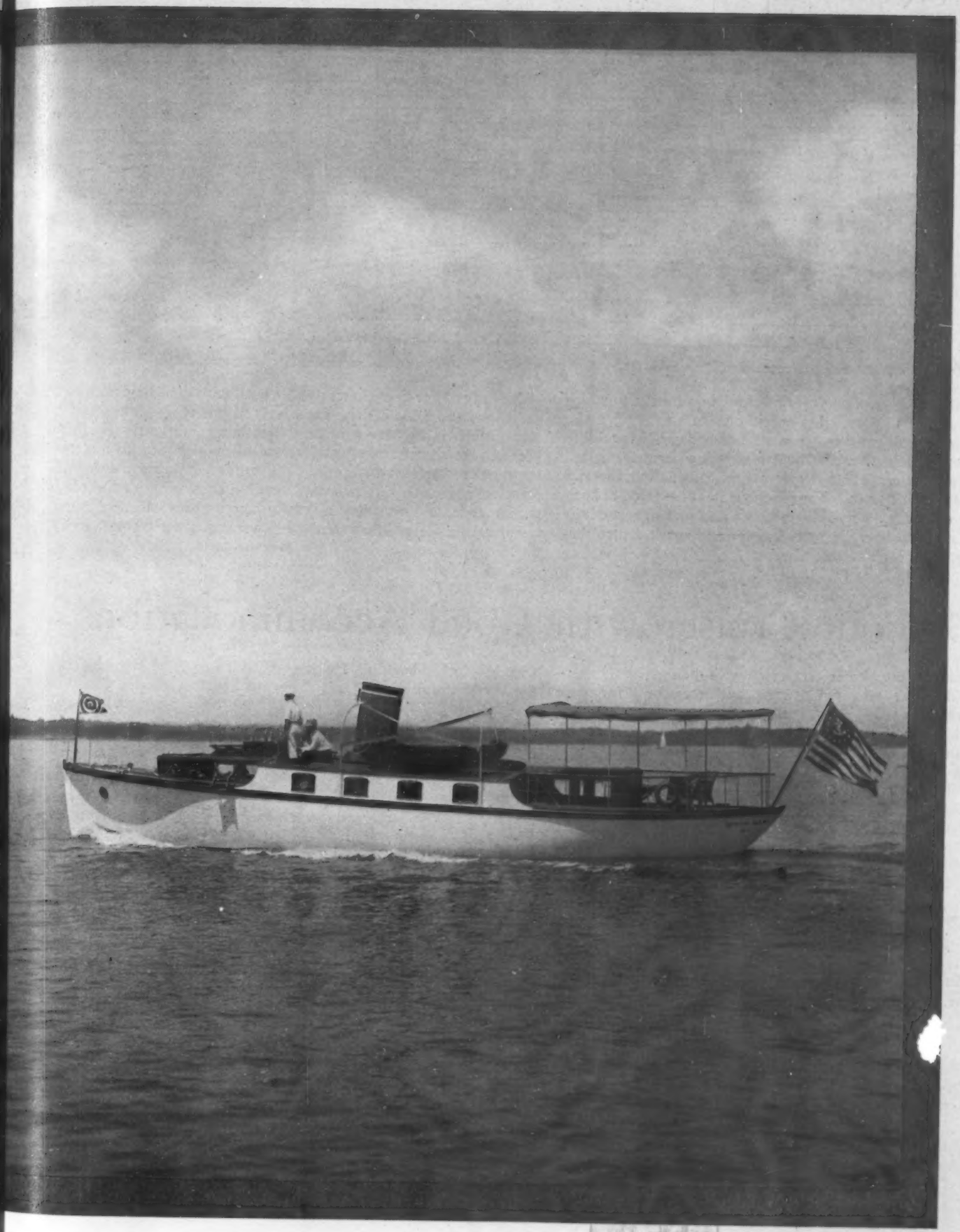
She is heavily built, to stand hard usage, having oak keel and frames, the latter being steam-bent and spaced 12 inches center to center. The planking is of white cedar, finished down to 1 inch, while the sides of the cabin house, which are carried above the sheer strake, are of mahogany, seven-eighths of an inch thick, finished bright, giving the boat a pleasing appearance. A feature not often seen in boats of this size, and one which adds considerably to her deck room, is the substitution of a flush deck aft in place of the usual cockpit, this deck being surrounded by a pipe railing on stanchions, with a washboard on either side, extending in a graceful sweep from the after-end of the cabin house. This not only gives increased deck room, but considerable additional storage space below, in this space being located the ice box, gasolene tank, lazarette, etc.

The entrance to the cabin is from the starboard side of this deck by a companionway leading below alongside of the engine. On the opposite, or port, side of the engine is located the galley, with stove, sink and a buffet, while on the starboard side, between the steps and the side of the boat, is a work bench, with a folding berth over it. Forward of this engine room, and separated from it by swinging doors, is a roomy main cabin, with a full-length transom on either side, at the after-end of the starboard one being a desk, while the buffet is aft of the port transom. A folding door leads forward from this main cabin into a stateroom with an extension berth on the port side and a bureau on the starboard side, forward of which is a full-length hanging wardrobe. Still further forward is a toilet room, with wash basin and the usual plumbing and lockers on either side. In the forepeak, separated from the toilet room by a bulkhead, are the water tanks and space for anchors, rodes, etc. A large skylight

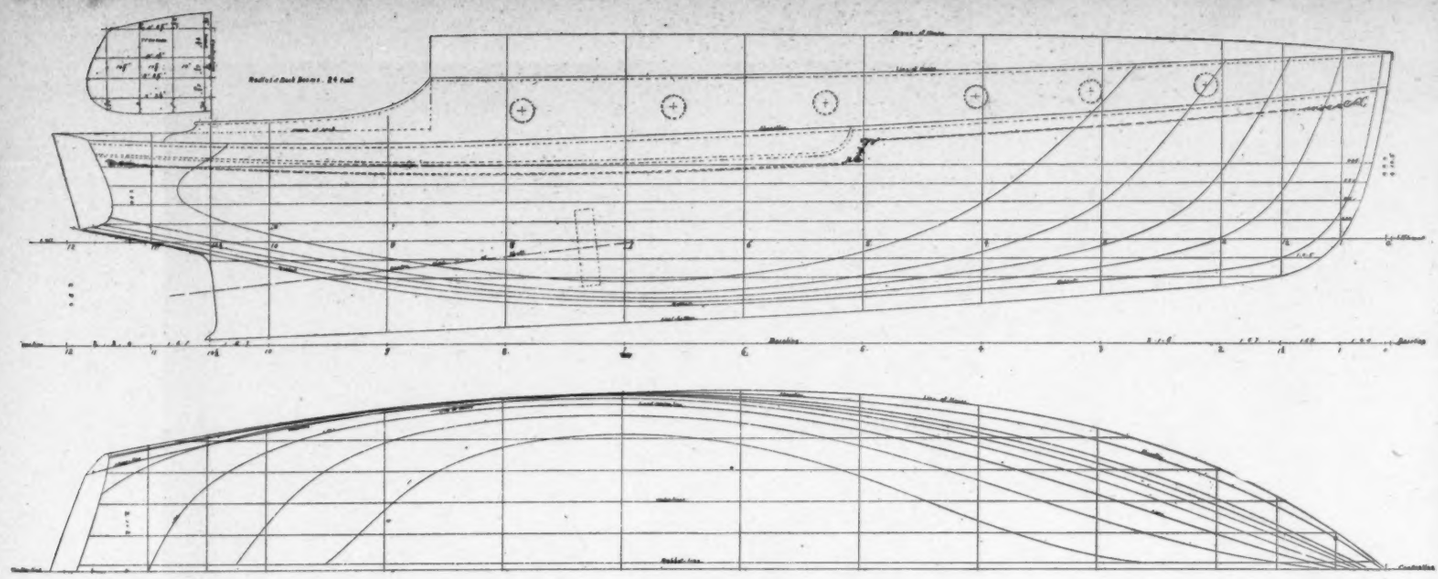




TWO TYPES OF CRUISERS. THE MEDIUM-SIZED POWE



ED POWER BOAT—DAY IS THE MOST USEFUL ALL-AROUND BOAT EVER BUILT.



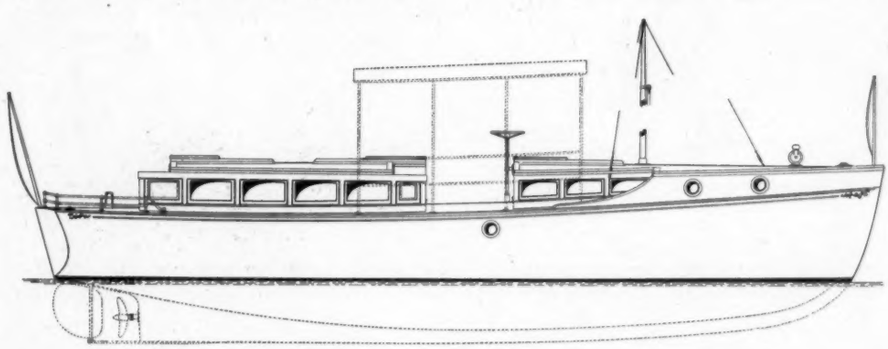
and cowl ventilator give plenty of air below, in addition to which there are six swinging port lights on either side.

The motive power consists of a 12 horsepower, heavy-duty Buffalo motor, which gives the boat a sustained cruising speed of 8 knots—a very creditable performance, considering the size of the boat and the power. The steering is done from a horizontal wheel above the after cabin bulkhead and just to port of the fore-and-aft midship line, the reverse lever and spark control being located within reach of this wheel.

A study of her lines shows an able boat, with good displacement, easy lines and fair deadrise for a boat of this type—points which count much in her favor in hard weather conditions. A slight break in her sheer strake just forward of amidships adds a pleasing touch to her outboard profile. There is a standing awning on stanchions over the after-deck, extending forward over the companion slide, and affording a certain amount of protection to the helmsman, a feature that should be appreciated on a hot summer day.

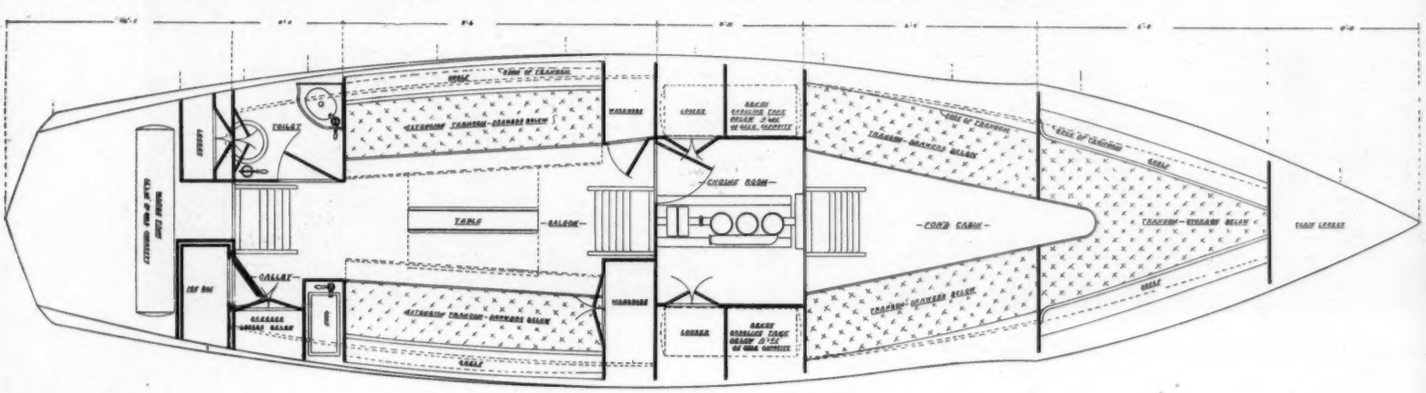
A 38-Foot Cruiser with Good Accommodations

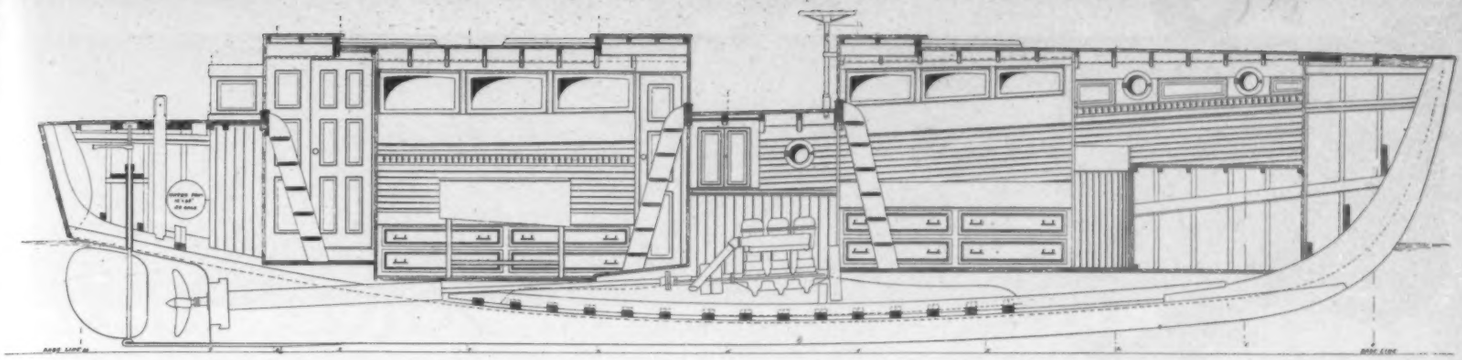
AMONG the new power cruisers now building for the season of 1911, and one that will prove noteworthy for comfortable and practical cabin accommodations, and also for pleasing and shipshape appearance, is the 38-footer designed by Julius Petersen, of Nyack, N. Y., for Mr. John T. Atherton, of New York City, who will use her on the Hudson and on Long Island Sound and adjacent waters.



The Erminie II is 38 feet in length over all, 35 feet 2½ inches on the waterline, 9 feet beam, and draws 34 inches of water. She is a bridge-decked boat, but the glass-sided trunk extending aft from the forward raised deck gives her an unusual amount of cabin room forward, and renders these forward quarters lighter and better ventilated than is usually found in this type of craft.

She has a slightly rounded bow and Veed stern, raking aft. There is a sufficient amount of deadrise to give her a slow, easy roll in a seaway, and the bow is flared sufficiently to render her dry, while her tumble-home stern adds considerably to her graceful appearance.





For a 38-footer, she contains a tremendous amount of available cabin space. In the extreme bow is located the chain locker. Aft of this comes a stateroom, 6 feet 3 inches in length. Next aft is a second cabin of the same dimensions, from which a companionway leads to the bridge deck. Then comes the engine room, amidships, 3 feet 11 inches in length, located under the bridge deck, in which is installed a three-cylinder, 20-horsepower, two-cycle engine with reverse gear.

On each side of the engine room is a work-bench and locker, with a 40-gallon gasolene tank below. An awning on stanchions covers the bridge deck amidships and the companionways on both the forward and after-houses.

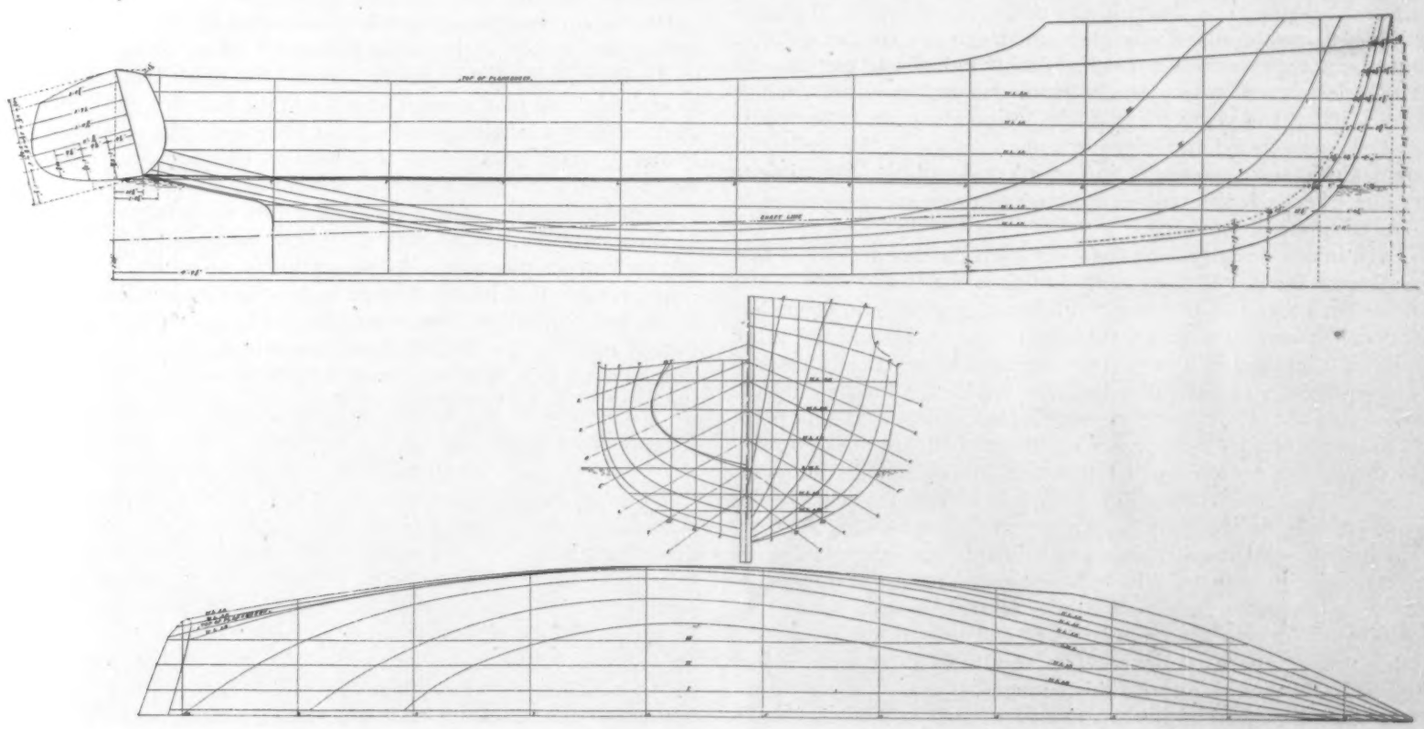
Aft of the engine room, and connected with it by a door on the port side, is the main saloon, 8 feet 6 inches in length, with two full-length wardrobes at its forward end. On each side of the saloon are extension berths, and there is a folding table in the center. A passageway leads from the main saloon to the after-companionway, and on the port side of this passageway is the toilet room and on the starboard side the galley, containing sink and stove space with lockers beneath. A particularly pleasing feature of this galley is the fact that the icebox is under the after-deck, through which the ice may be loaded without mussing up the cabin, while the door by which the provisions are reached allows easy access to them from the galley itself. The icebox, and also a large locker underneath the port side of the after-deck, form comfortable seats. Underneath the after-deck is also a 30-gallon fresh-water tank.

It will be noticed that the weights of the engine and fuel are carried well amidships, making her an easy boat in a seaway, and the experienced cruiser will note with satisfaction the generous amount of storage room provided, both by lockers and also by dresser drawers under the berths.

While the boat has ample sleeping accommodations for six people, the arrangement of engine controls, reverse gear and steering wheel allows her to be as easily managed as a single-hander.

Her construction will be of the best, and it is estimated that she will make 10 miles per hour.

Where any amount of real living aboard is contemplated, the bridge-deck cruiser offers many advantages over the out-and-out raised-deck type. Then the position of the steering gear and engine controls makes a 38 or 40-foot boat as easily handled as a considerably smaller craft, in which the navigator is placed 'way aft, especially in making a mooring or float. It is true that the out-and-out raised-deck cruiser with small port lights is, theoretically, the better seaboat for rough waters; but, in practice, the average power boat of moderate size is not making Bermuda trips or outside runs in the kind of weather that will require everything to be battened down. When one comes to figure out how large a proportion of a boat's season is spent swinging at anchor, and how largely boat owners of the present day regard a craft as a substitute for a seaside cottage or a bungalow, the ability of the designer in obtaining, in a boat of this size, the accommodations which Erminie II offers will be appreciated.



EDITORIAL

Published by the Yachting Publishing Co.; Oswald Garrison Villard, President; Herbert L. Stone, Secretary and Treasurer

Restricted and One-Design Classes for Power Boats.

At a recent meeting of the American Power Boat Association that organization, which practically is the governing body in motor-boat racing in Eastern waters, adopted three restricted classes, and at last we are to see racing tried under conditions that have been advocated ever since the internal-combustion engine became a factor in boat racing. Two years ago rules were formulated by another association for creating such classes, but were never put to the test.

The three classes as adopted are the 21-foot, 26-foot and 32-foot, and in each class boats must not exceed this over-all length. The only other restrictions are in regard to a minimum weight and maximum cylinder volume. The minimum weight, without crew, for the three classes are, respectively, 1,600, 2,100 and 2,900 pounds, and the respective maximum cylinder volumes are 255, 395 and 570 cubic inches. Under these restrictions boats will compete against other boats in their class without time allowance.

The object, obviously, in creating these classes is to provide racing for the man of moderate means who desires to enter the sport with some degree of assurance that he is not handicapped from the start by the fact that the man with a longer pocketbook can pre-empt all the prizes by outbuilding or outpowering him, and also to bring competition down to the boat-for-boat basis. On their face, the requirements of these proposed classes seem well drawn, without too many restrictions being imposed.

The value of a restricted class is that it allows designers leeway in the development of the hull and makes an incentive to engine builders to create added efficiency under given cylinder volume, thus giving expression to individual design in hull and engine. In this respect it differs materially from one-design classes, which were agitated last year; for in a one-design class the same opportunity is not offered for improvement in design or the pitting of one model against another. So far, it has even been impossible to try the effect of different designs of engines and propellers in boats of a one-design class.

Even in one-design racing the sport itself has not proved all that was hoped for it. In the one-design class that was built for use on the St. Lawrence last year, with boats, engines and propellers identical, it was soon found that the various boats did not at all perform alike, and in a very short time it was practically assured before any race the position that any particular boat would occupy at the finish of that race, barring accidents. This is probably due to the fact that, even with the utmost care, it is impossible to build two engines that will perform in exactly the same manner. For this reason after the first few races the sport in this particular one-design class lost some of its zest, and it would seem that in restricted class racing, even though one boat may prove her superiority very quickly and take away from the interest of the class thereafter, the opportunity is still present for the ingenuity of designers, engine builders and owners under a minimum number of restrictions. The results of these new classes will be watched with interest this summer.

At the same meeting the American Power Boat Association decided that in future all racing boats classed as such were to be weighed, instead of using the measurement of the 'midship section for displacement as the dividing factor. They are to be weighed without the crew aboard, and 300 pounds is to be added to the weight for the weight of the crew. The formula remains the same, and all other boats are to be measured with the crew on board, as heretofore.

The Power Boat on Club Cruises. On the annual cruise last summer of a club that had always been noted in the past for its activity in the sailing end of the sport it was noticed that fully one-third of the fleet was made up of power boats of various sizes and types. In the daily port-to-port runs, for which prizes were offered, no classes or prizes were provided for power boats; and yet it is doubtful if the cruise would have been as much of a success had it not been for the presence of these power boats, which certainly earned their passage on that cruise, and on practically every other club cruise in which they participated. In the first place, the committee boat was a power cruiser belonging to a member of the club, in place of a chartered tugboat. The press boat was also a power boat, with speed sufficient to enable her to act as stake boat at the finish, while the other power boats flying the burgee of the club at all times acted as convoys to the fleet. Many a start was saved a postponement by the fact that the sailing craft were towed to the line by the power boats in the light breezes that usually prevail on a summer morning, it being no unusual sight to see a little 30-foot cruiser or launch with a string of three or four sloops behind her coming out of the harbor and heading for the committee boat, anchored outside.

During the run these same boats hovered on the flanks of the racing fleet, ready at the finish to tow the racers to an anchorage in the invariable calm of sunset, should the finish be that late, or to assist in case of a sudden squall and the carrying away of any gear. Many a long night's drift has been saved the windjammers by the presence of a power boat with an obliging owner, and so much has this become a part of the routine of squadron cruises, even in out-and-out sailing clubs, that this work is now expected of them, and the lack of their ministrations would rob the cruise of much of its pleasure. As the majority of yacht clubs in this country cater to a mixed fleet of both power and sailing craft, it seems only right that some events should be provided in the port-to-port runs for the benefit of the motor-boat owner who believes that he has a boat that can "trim" any other craft of his power in the fleet.

The 18-Foot Class. In our last issue I had occasion to call attention to the 18-foot knockabout class, which originated in Massachusetts Bay in 1900, and which has so successfully withstood the changes of the last ten years as to make it an ideal class for small-boat racing. The season of 1911 promises even better sport in this class than has been seen in the past, there being several inter-sectional matches already scheduled in various localities, both on salt and fresh water. These boats are such ideal little craft that we would like to see the class started in other localities, and we should be glad to send information as to the requirements to any club or association interested in the formation of such an organization.

The Principal Exhibitors

AT THE

NEW YORK MOTOR BOAT SHOW

February 21 to March 4, 1911

Elco Motor Boats in Madison Square Garden

An unusually attractive exhibit of high-grade motor boats, and one that is sure to attract great attention, will be that of the Electric Launch Company, of Bayonne, N. J. Among the boats shown will be some of novel design.

The 1911 Elco-de-Luxe will be one of the handsomest and one of the largest boats at the Show, its over-all length being 54 feet, and extreme beam 9 feet 3 inches. The illustration published herewith shows the fine lines of this type of boat, with the high bow, cabin amidships and spacious open cockpit aft. The 1911 model will have full head room in the motor room, which is forward, and accessible through a sliding glass hatch of a new form, affording unusual light and ventilation for the motor room. The bridge-deck, directly aft of the engine space, is of generous dimensions, affording ample room to seat a company in wicker chairs and on the permanent settee. The steering wheel, with motor controls alongside, is located at forward end of bridge-deck, from which point the boat will be steered and engines controlled.

54-ft. Elco de Luxe Motor Yacht exhibited by The Electric Launch Co. Length over all 54 ft., beam 9 ft., draft 3 ft.

The main cabin is most luxuriously finished and equipped, the woodwork being in selected mahogany, with ceilings of panelled mahogany, finished in white enamel. Plate-glass mirrors will be used as ornamentation, as they proved very effective in the last year's model. The seating arrangement will consist of extension transoms, so arranged as to pull out, forming wide, comfortable berths, if it is desired to sleep on board. Hanging lockers and a writing desk, with cabinet and china closet, will be installed in the cabin. Adjoining the main cabin will be the galley and a lavatory. The former will be equipped with porcelain-lined sink, copper-sheathed stove bench, large ice-box, metal lined and thoroughly insulated with cork, and glass and china racks. There will also be an alcohol stove, permitting of the serving of hot meals on board. The lavatory will be equipped with the usual yacht fixtures, folding basin and toilet articles, and will have a large plate-glass mirror. The after cockpit will be unusually large, and protected by a light, wooden, canvas-covered roof, supported upon specially designed brass stanchions, the floor being level, to accommodate wicker chairs.

The hull design affords unusual seaworthy qualities and comfortable cabin accommodations, while the highest efficiency is obtained from the power installed, these boats having a guaranteed speed of 15 miles an hour, putting them in a class by themselves, considering the length, beam, seaworthy qualities and accommodations.

The hull construction is of the usual high Elco standard, with oak keel and frames and selected Southern cedar planking, while the fittings and furnishings are the handsomest that can be procured. The Elco-de-Luxe type has been developed by this company during the past five years, and the success of the boats in the hands of the buyers has been most encouraging to the designers and builders. One of the 1910 models, the Innisfail, belonging to the late Mr. M. Cudahy, made a most successful run from the works of the builders at Bayonne, N. J., to Mackinac Island, in Lake Michigan, the boat being delivered to the owner in this way with the owner's crew aboard. Other boats of this type are in use on the St. Lawrence, Lake Como, Italy, Muskoka Lakes, Canada and Great South Bay, and other points on the seacoast and inland waters.

The power equipment consists of a gasolene motor of 60 to 75 horsepower of six cylinders, installed in the very best possible manner, with fuel tank of 100 gallons capacity installed in the usual Elco method, insuring maximum safety. These boats have proved ideal for day service, particularly, although provision is made for sleeping four on board in the owner's quarters, with berths for two men in the motor room.

A 40-foot Elco raised-deck cruiser of the latest design and type will also be exhibited at the Show. This boat will be similar in design to the 1910 cruiser which attracted such favorable comment last year. This type of boat is designed to afford maximum seaworthy qualities with comfortable cabin accommodations, six berths being provided in the owner's quarters

20-ft. Elco Express Tender designed and built by The Electric Launch Co.

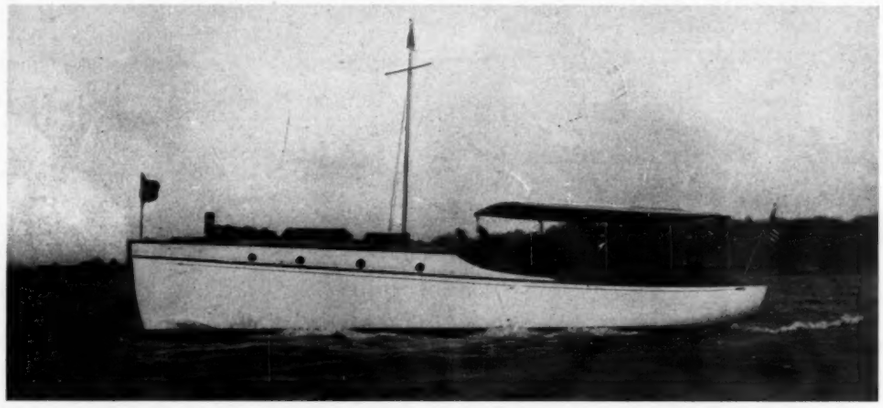
28-ft. Elco Express Runabout with a 40-H. P. motor. Speed 20 miles per hour.

35-ft. Elco Express Launch with a 60-H. P. motor. Speed 24 miles per hour.

and one in the engine room. This is a perfectly safe type of boat to use for cruising off shore and up and down the coast, there being no waters within 500 miles of New York in which she would not be safe if due attention were given to her handling.

The hull construction is of the usual Elco standard with oak keel and frames and selected planking of Southern cedar. The illustration herewith shows the high freeboard and full bow of this design. The after deck will be flush and will be of white pine laid in narrow strips, with covering board and outside of cabin handsomely finished in mahogany. The steering wheel, located on the after end of the cabin roof, will have control levers and reverse gear alongside to enable the helmsman to steer and control the engine from one point, thus permitting the handling of the boat at all times by one man.

A mahogany companionway, with mahogany stairway, leads into the motor room and thence to the main cabin, which is finished throughout in white enamel with mahogany trim. Beginning forward, the owner's quarters consist of a stateroom with two comfortable single berths, with lockers and drawers underneath, separated by partitions and curtains from the main saloon, which is equipped with side transoms and two hinged berths, where four can sleep very comfortably. Adjoining this main saloon are the galley, lavatory and motor room, a large hanging closet being provided between these quarters for hanging clothes at full length and storing supplies. The galley is equipped with porcelain sink, zinc-covered stove bench for a two-hole alcohol stove and a large ice-box with zinc lining and cork insulation. Glass and china racks are provided. Fresh water is contained in a 50-gallon tank installed under the forward deck. The lavatory is of unusual size and equipped with the regular yacht fixtures. A large transom berth is provided in the motor room, the space under the after-deck being utilized for stowing supplies and equipment.



40-ft. Elco Cruiser. Length over all 40 ft., beam 9 ft. 8 ins., draft 3 ft. 9 ins.

The power plant consists of a four-cylinder, 16-20-horsepower gasolene marine engine of the latest design and type, the gasolene tank being of seamless drawn steel, of 100 gallons capacity, installed under the bridge-deck, the fuel flowing by gravity to the carburetor. The installation of the power plant and fuel system is taken care of in the usual thorough Elco method.

Unusual space and head room are afforded in the cabin, the latter being a full 6 feet 2 inches throughout. This is a detail that is very often overlooked in designing a boat of this type, and should be carefully considered, the length and beam not being the only dimensions to take into consideration, the molded depth, *i. e.*, the depth of the boat from keel to covering board, being more important still. In the Elco cruiser this is uncommonly deep, the cubical contents of the hull being from 20 to 25 per cent greater than is usually found in boats of this size and type.

The equipment of the boat is very complete, consisting of upholstered cushions of Orkney cloth, Brussels carpets in the cabins and linoleum in the motor room. An awning covers the cockpit deck, supported by galvanized iron framework with wooden battens. In fact, no expense has been spared in making this one of the best 40-foot cruisers of her size, the design and equipment being developed from years of practical experience.

A new design of Elco runabout will be shown, 28 feet in length and 5 feet beam, with a deep hull, high freeboard and large cockpit, capable of seating eight or ten people. This type is built very much on the plan of the "one-design" boat which is fast becoming so popular. Owing to its experience with this class of craft the Electric Launch Company is able to turn out a boat with the best of seaworthy qualities and a guaranteed speed of 20 miles per hour at a most reasonable figure.

This boat should prove satisfactory for pleasure launch service, and it can be operated at a minimum expense with the 40-horsepower Elco gasolene motor which is installed. For protection against weather, the cockpit may be covered with an automobile type of hood, side curtains and an Elco plate-glass wind shield forward. The accompanying photograph shows the comfortable seating arrangements, which take the form of 'thwartship seats, facing forward, or of wicker chairs. Lockers are provided under the permanent seats, which are upholstered in leather over a hair and cork filling.

The construction calls for a keel of white oak with specially bent oak frames; the planking of Southern cedar, of a finished thickness of half an inch, laid in uniform, clear narrow strakes and secured by copper rivets. The seams are caulked with special cotton, payed and puttied, and the outside finished smooth with three coats of white lead paint. Watertight bulkheads are placed fore and aft, which assist in floating launch in case of accident. The decks, coaming and interior work are all finished in selected Laguna mahogany.

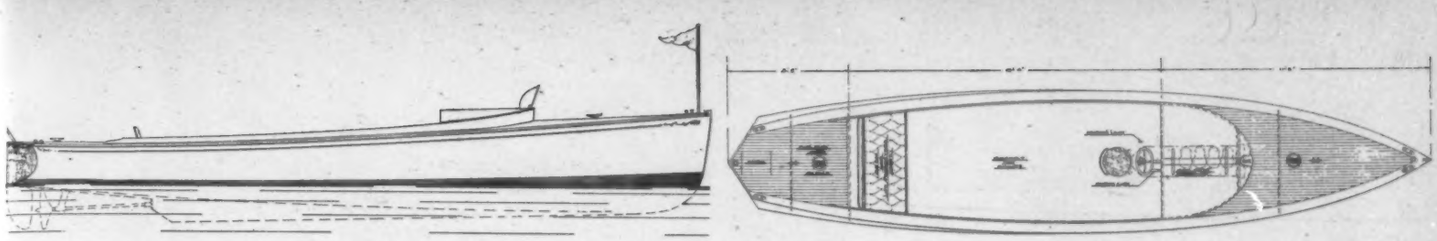
The power consists of an Elco four-cylinder, 40-horsepower marine motor, located forward. Ample protection is afforded it by a hinged metal hood, giving easy access to the engine compartment. The motor is of the four-cycle type, and has its cylinders cast in pairs, the dimensions being 5 inches bore by 4¾ stroke, and it develops its rated power at a moderate speed.

The success of the 35-foot Elco Express during the past years has been most gratifying, and one of these will be seen at the Show. It has been found difficult to improve these boats over the present design, which has been perfected to a high degree. Improvements, however, have been made in certain details of hull construction and in increased freeboard, while the power equipment has been improved so as to develop increased horsepower, enabling the new boats to be sold under a guaranteed speed of 24 statute miles per hour. This is a most unusual speed for a 35-foot boat combining seaworthy qualities, comfortable seating appointments and large carrying capacity.

The 35-foot Elco gasolene express launches will serve one on water as the automobile does on land. They are not racing machines but fast, reliable pleasure boats, offering the combination of speed, comfort and safety. Easy chairs or permanent seats, wind shield and folding automobile hood make the boats comfortable regardless of the weather. Accommodations are provided for eight to ten passengers in wicker chairs or on permanent upholstered seats. The steersman's seat is near the control bulkhead, within convenient reach of the steering wheel and friction type of control levers.

The keel of these boats is of white oak, with specially bent elm frames, while the planking is of selected Laguna mahogany, finished thickness one-half inch, in narrow strakes and uniform seams, secured to frames by copper boat nails riveted over copper washers. The motive power consists of a six-cylinder, 60 to 70-horsepower Elco gasolene marine engine, located under the forward deck, a hinged metal cover affording full protection and easy access to motor compartment.

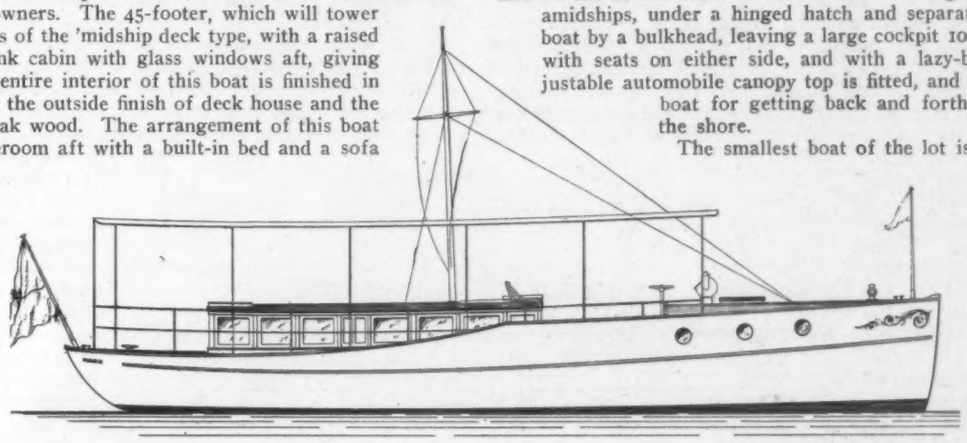
In addition to these boats the Elco Company will have on exhibition one of their 20-foot express tenders which attracted so much attention at the races last season. and which may be carried on yachts' davits, and a new electric launch of this year's design with Edison battery.

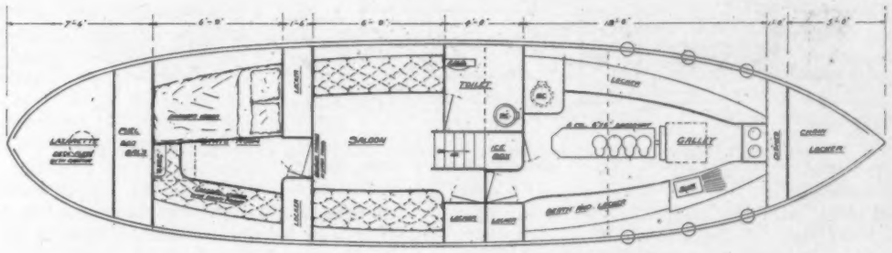


30-ft. stock-type runabout of the Gas Engine & Power Co. and Charles L. Seabury & Co., Con., fitted with Speedway engine.

A Fleet of Cruisers, Runabouts and Speedboats

In the space occupied by the Gas Engine & Power Company and Chas. L. Seabury & Company, Con., of Morris Heights, New York City, will be moored a fleet of motor-driven craft showing the latest developments in various types of boats which will be sure to attract the attention and hold the interest of a large crowd of motor boat enthusiasts. This squadron will consist of the following boats: A 45-foot over-all cruiser; a 40-foot speed launch of the same type as Tartar, which made such a wonderful showing last year, and which is guaranteed to deliver 34 miles per hour; a 30-foot gasolene runabout of their stock pattern; a 20-foot mahogany speed launch, and a 25-foot teak yacht tender. The workmanship and finish of all of these boats will come up to the high standard maintained by these builders, and the perfection of detail will leave little to be desired by their future owners. The 45-footer, which will tower above the smaller craft, is of the 'midship deck type, with a raised deck forward and a trunk cabin with glass windows aft, giving ample head room. The entire interior of this boat is finished in paneled mahogany, while the outside finish of deck house and the deck trimmings are of teak wood. The arrangement of this boat shows a good-sized stateroom aft with a built-in bed and a sofa transom, a main saloon amidships, while the engine is placed partly under the bridge-deck and partly under the raised deck forward. In this engine room is also a berth for the paid-hand, lockers, stove, sink and usual kitchen fittings. The engine is a four-cylinder, 6 by 6-inch Speedway, giving the boat a speed of 10 miles an hour. Her dimensions are: Length over all, 45 feet; length water-line, 40 feet 9 inches; beam, 10 feet 6 inches; draft, 2 feet 9 inches. She has a slightly rounded bow, with considerable flare or flam above the water-line, and a compromise stern, and she is handled from the bridge-deck, where her steering wheel and engine control are by the forward bulkhead.





45-ft. cruiser of the Gas Engine & Power Co. and Chas. L. Seabury & Co., Con.

The next boat in point of size is the 34-mile speed launch, her dimensions being 39 feet 8 inches over all with a beam of 6 feet and a draft of 2 feet 10 inches. She is mahogany planked with batten seam construction, copper fastened, the whole being finished bright and highly polished. Her motive power will consist of a six-cylinder, 8 by 8 Speedway motor, the same type as used in Tartar. This engine is located amidships, being covered by the turtle deck, in which is a hinged hatch, giving easy access to the motor from either side. Forward of the engine, and under the same turtle deck, are the gasolene tanks, while the after part of the boat is taken up by a cockpit with two athwartship lazy-back seats. This cockpit is 8 feet 6 inches long, and aft of it is a deck 5 feet 11 inches in length. Not only is the boat beautifully finished but every line in her denotes speed. (See illustration, page 138.)

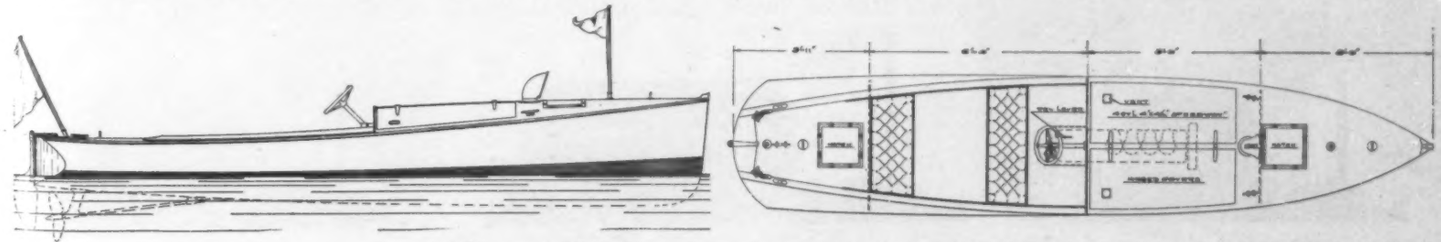
The 30-foot runabout represents one of the Gas Engine & Power Company and Charles L. Seabury & Company's stock type. She has cedar planking with mahogany deck and mahogany finish, the engine being located under the hatch over the forward end of the cockpit. The cockpit is left entirely free for chairs with the exception of a lazy-back seat across the after end, while there is a fixed steersman's chair just aft of the automobile type steering wheel, which is located right behind the engine. The engine is of the four-cylinder Speedway type.

The 25-foot yacht tender will be planked and finished in teak wood, and equipped with a four-cylinder, 4 by 4½-inch Speedway motor. This boat is also of the batten seam construction. Her engine is located forward of amidships, under a hinged hatch and separated from the rest of the boat by a bulkhead, leaving a large cockpit 10 feet long, which is fitted with seats on either side, and with a lazy-back after seat. An adjustable automobile canopy top is fitted, and the craft makes an ideal boat for getting back and forth between the yacht and the shore.

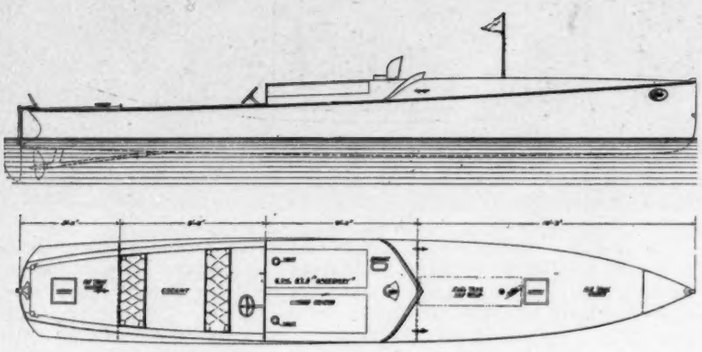
The smallest boat of the lot is the little 20-foot speed launch, and she will undoubtedly attract the attention of all those who desire something more than the average in the way of speed. She is 20 feet 3 inches over all, and is fitted with a four-cylinder, 4 by 4½ Speedway motor guaranteed to drive her 17 miles per hour. The engine is located under a hinged hood, which is an extension of the forward deck, which has enough crown to be called a turtle deck. Aft of this is a 6-foot 4-inch cockpit, with two athwartship seats, from the forward one of which the boat is steered by an automobile steering wheel, to which is attached the engine control. She is built entirely of mahogany, and is beautifully fitted inside and out. In addition to this squadron the Gas Engine & Power Company and Chas. L. Seabury & Company, Con., will exhibit the usual number of their famous Speedway engines, showing all the latest improvements in design and in refinement.

An Interesting Line of Loew Victors

The Loew Manufacturing Company, of Cleveland, Ohio, will have on exhibition at the Show three of their four-cycle engines to represent their complete line of six sizes, ranging from 6 to 60 horsepower in from one to six cylinders. The engines that will be seen in New York at the Show are a 15-25-horsepower Special in four cylinders, a four-cylinder, 24-40-horsepower regular, and a 36-60-horsepower Loew in six cylinders.



20-ft. mahogany speed launch with Speedway engine, guaranteed to make 17 miles.



40-ft. speed launch of the Tartar type, fitted with 6-cylinder Speedway motor, and guaranteed to make 34 miles an hour.

The four-cylinder Special is of 4-inch bore by 5-inch stroke, designed to run at a normal speed of 700 revolutions, though it has an effective speed range from 150-1,100 revolutions per minute. This is made with either aluminum or iron case, the weight with the former being 500 pounds and with the latter 750 pounds. This Special, as well as both of the other sizes at the Show, will be fitted with two separate systems of ignition, operating on two sets of spark plugs, deriving current from two separate sources. Battery, magneto, reverse gear, automatic oiling system and air compressor are included on all of the four and six-cylinder Loew Victor motors.

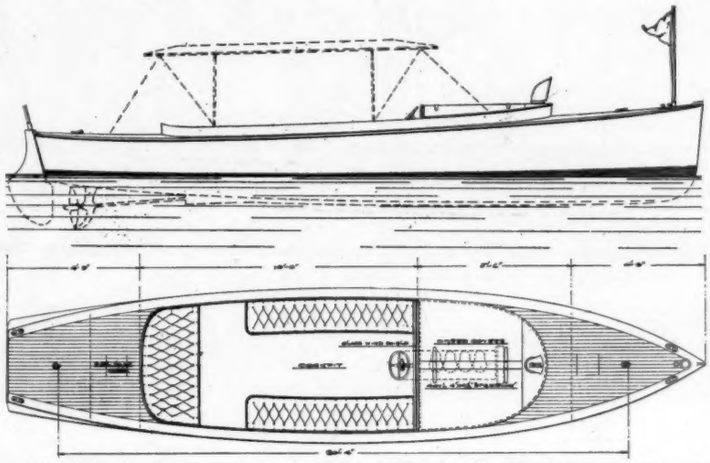
The 24-40-horsepower and 36-60-horsepower Regular have a normal speed of 650 revolutions per minute, with a range of 150 to 1,000, and are built in either aluminum or iron base. Both of these engines have a bore of 4¾ and stroke of 5½, and have reverse gear built as an integral part of the engine, being built on the lower half of the crank case.

In taking up the manufacture of internal combustion engines for marine purposes, the Loew Manufacturing Company decided that a better product could be turned out by building one type of engine, of a popular size, equipped complete with the highest-priced and most efficient accessories, the engine being designed to accommodate these accessories, which include everything that would be of value to the user, furnished at the original price and as stock equipment. Every machine was to be built and equipped alike, making a complete, modern and up-to-date power plant.

In this way quality could be maintained at a moderate cost to the consumer that was not possible with the same grade of engine turned out in various types. Quantity tells the whole story—the number of machines built, with every one built exactly alike. All engines going through the factory alike eliminates special orders and special labor in the shop, getting together and machining special outfits. Quantity also permits the purchase of high-grade material at as close and even a closer figure than lower-quality material.

The success, popularity and the satisfaction of the one size of Loew Victor Engine has brought such a demand for various sizes of Loew Victor that in 1911 the Loew Manufacturing Company will build in the same quantities 1, 2, 3, 4 and 6-cylinder engines, all having bore of 4¾ by 5½ stroke, and one special Loew Victor Engine having bore and stroke of 4 by 5.

The Loew Victor exhibit is sure to attract the attention of all those who know a good engine.



25-ft. Yacht Tender planked entirely with teak, built by Gas Engine & Power Co. and Chas. L. Seabury & Co., Con.

A Buffalo Corral The big corral of the Buffalo Gasolene Motor Company in the center of the Garden floor will have an admiring crowd hanging over the surrounding fence to see the new Buffalo which has been added to the herd, and the added improvements and refinements of the year which appear on the old types. Owing to the limitations of Madison Square Garden the Buffalo Gasolene Motor Company could not bring down from the factory the entire line of twenty-three different models, and for this reason the big 8½ by 9-inch T-head multi-cylinder engines in the regular type, the larger heavy duties in six cylinders, and the 225-horsepower, eight-cylinder "V" type racing engine will not be shown.

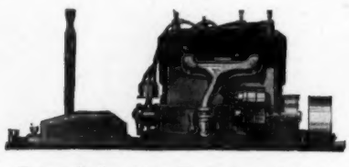
However, the eight Buffaloes that will be exhibited have been selected from among the twenty-three models with the idea of making a representative showing that will be of interest to the greatest number. They will include engines in the regular, heavy-duty and high-speed types, in both make-and-break and jump-spark ignition, and in two, four and six cylinders. The exhibit will illustrate the belief of the Buffalo Company in the mechanical principle of the multi-cylinder engines, because of their more quiet and vibrationless running. It will be noted that in even so small an engine as the 10 horsepower of the regular type the Buffalo Company uses four cylinders. Even in the heavy-duty line the Buffalo people start using four cylinders with 24 horsepower, while the 54-horsepower heavy duty is in six cylinders.

Of the eleven Buffalo models in the regular type there will be three at the New York Show, one of them a 3-horsepower, 3 inches by 4 inches, which is in two cylinders. Reverse gears have been regularly supplied with Buffaloes for years, built in as an integral and rigid part of the engine proper, and even this small 3-horsepower engine will be shown with a reverse gear. It will have the Buffalo patented mechanical make-and-break that has stood the test of a dozen years. There will also be shown a 10-horsepower, four-cylinder engine and a 20-horsepower, four-cylinder engine of the regular type. There will also be seen two of the seven Buffalo heavy duties—a 12-horsepower, 6 inches by 7½ inches, in two cylinders, and a 24-horsepower in four cylinders with the same bore and stroke. These engines will be shown with mechanical make-and-break ignition, though practically all of the Buffaloes can be had with either make-and-break or jump spark, at the option of the buyer.

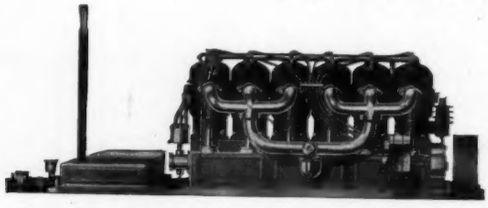
There will be three of the high-speed Buffaloes at the Show—the 25-horsepower auto-marine in four cylinders, 60-horsepower 6¼-inch by 6¾-inch engine in four cylinders, and a new Buffalo production in the shape of a six-cylinder, 4¾-inch by 5-inch auto-marine rated at 40 horsepower at 800 revolutions per minute.

A Long, Gray Line At last year's Show the exhibit of the Gray Motor Company, of Detroit, Mich., close to the main entrance to the Garden, attracted a great deal of attention. The six engines that the Gray Company will have on exhibition this year as samples of their long line of Gray two-cycle motors will undoubtedly prove interesting to all owners of power boats who visit the Show.

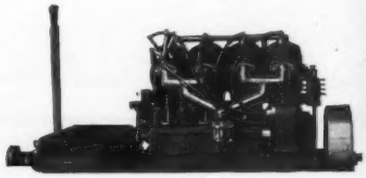
The 1911 Gray model "R" is exactly the same engine as the model "R" of 1910, as far as the principle of design and construction are concerned, though it shows refinement in detail wherever possible. This model "R" has been, and still is, the most popular engine that the Gray Motor Company has put on the market, on account of its extreme simplicity and durability, and it has always been noted for developing power in excess of the rating given by the makers. All of their model "R" engines are equipped with Krice carburetor and have gravity feed oilers.



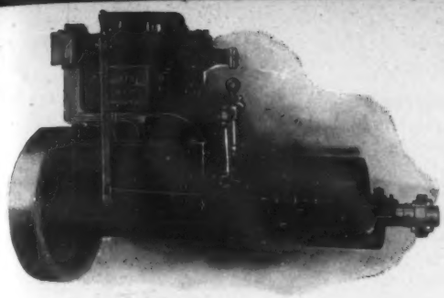
Four-cylinder, 15-25-H. P. Loew Victor Special.



Six-cylinder, 36-60-H. P. Loew Victor motor. These three Loew motors are fitted with reverse gears.



Four-cylinder, 24-40-H. P. Loew Victor Engine.



12-H. P., 2-cylinder Heavy-Duty Buffalo.

Valve side of 24-H. P., 4-cylinder Heavy-Duty Buffalo.

Valve side of 20-H. P. Regular Type Buffalo.

In the model "T" line the Gray Company will exhibit 7 horsepower, 8 horsepower and 12 horsepower in single cylinders; 14 and 24 horsepower in double cylinders, and 21 and 36 horsepower in triple-cylinder engines.

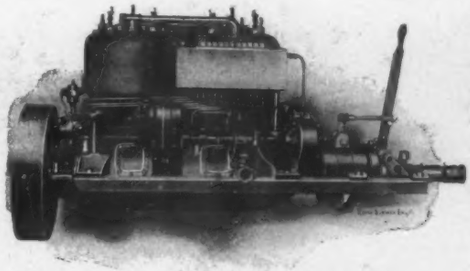
The Gray model "T" engines have removable cylinder heads, which are covered with a steel enameled cap. This feature makes this particular engine very easy to take apart, as the cylinder head can be removed in a very few minutes, allowing complete access to the cylinder. In the model "T" line the Gray Company are advocating lubrication through the gasolene. This system is very convenient, as all that is necessary is to mix about 1 pint of cylinder oil with every 5 gallons of gasolene. The lubricant is taken through the carburetor into the cylinder. Coming in contact with the piston walls and connecting rod by means of the oil grooves and the action of the piston rings, of which there are four, the oil is thoroughly distributed to all working parts. Of course, the individual grease cups which supply lubricant to the main bearings have to be retained. Large hand-hole plates are placed on both sides of the crank case, giving easy access to the crank chamber.

Non-Leakable Gasolene Tanks Janney, Steinmetz & Company, who have space No. 21 at the Motor Boat Show, will exhibit a complete line of their cold-drawn, seamless steel tanks, tinned and tested to 300 pounds, for gasolene or other liquids, compressed air, etc., and also high-pressure bottles of cold-drawn seamless construction.

A strong gasolene tank is of the utmost importance, as gasolene is very volatile, and if not properly contained is dangerous; but if the proper receptacle is used and other precautions taken, gasolene is as safe as any gas. Artificial gas used in illuminating is no more dangerous than gasified gasolene, and yet one would not put seamed or riveted piping in his house, but would employ good, strong seamless piping to eliminate all chance of leakage. Therefore, with the same element of danger the same, or even more, care should be exercised as with illuminating gas, for on yachts tanks are subject to heavy jars and hard use. All danger can be avoided, and gasolene be contained as safely as illuminating gas, by using strong, cold-drawn seamless steel tanks that are tinned with pure block tin, thoroughly tested, and which, therefore, cannot leak.

Pure gasolene is a preservative of all metals, but the commercial gasolene of to-day contains a certain percentage of sulphuric acid which attacks the zinc in galvanizing, leaving a residue in the tank to clog the piping. In time this action will perforate the tank itself, causing dangerous leaks. If, however, a receptacle is thoroughly tinned with pure block tin the acid has no effect whatsoever and will give a clean, lasting tank. Another point that should be carefully considered is that a tank be selected that has the least possible seams and riveted joints to open up and thus cause dangerous leaks. Janney, Steinmetz & Company's cold-drawn, seamless steel tanks, tinned and tested to 300 pounds hydrostatic, are cold-drawn from one piece of steel plate, of the very best soft open-hearth drawing steel, the drawing of which itself is a guarantee of the high quality of the steel. As they are drawn seamless there are no joints to open, and being tested to a high pressure leakage is impossible. These tanks are then dipped in pure block tin.

The high-grade material and construction of these tanks make them perfectly safe for gasolene containers, and they are so recognized by the best naval architects of the day and incorporated in their specifications where safety is required. The initial cost may be a trifle higher than those of inferior construction, yet when the life of the tank is taken into consideration the price becomes lower than those of cheaper construction. In addition there is the satisfaction of having a safe, sound and leakless tank, which is worth many times the price alone of the tank, and which should be the first consideration of all who have the welfare of the sport at heart. A Janney, Steinmetz & Company seamless tank is the best possible insurance that can be placed on a motor boat.



Magneto side of 25-H. P., 4-cylinder Auto-Marine Buffalo.

A Fay & Bowen 25-Footer The Fay & Bowen Engne Co., of Geneva, N. Y., the well-known manufacturers of motors and motor boats, will have an interesting exhibit at the Garden, consisting of one of their 25-foot "Special" launches and a full line of engines.

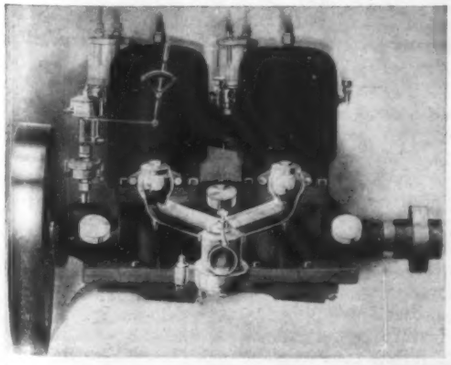
The 25-foot launch is a particularly attractive craft, elegantly finished in mahogany, handsomely paneled, counterbored and plugged. The planking is of white cedar, copper fastened. The boat is divided by an amidship bulkhead, on the fore side of which is an athwartship lazy-backed seat. In this forward cockpit is located the engine and the steering wheel, while the after cockpit is left free for wicker chairs, with the exception of another lazy-backed seat across the after end. The power consists of a two-cylinder Fay & Bowen motor. The equipment of this craft has been worked out to the finest detail.

The engine exhibit will consist of a complete line of Fay & Bowen engines, including the well-known kerosene convertible type of machine which this firm manufactures for commercial boats. A special feature of the Fay & Bowen exhibit this year will be one of their isolated electric lighting plants suitable for large yachts or country homes, which will be shown under full operation and will be one of the features of the Show. In both workmanship and finish the Fay & Bowen products are exceptional and will be sure to attract favorable comment.

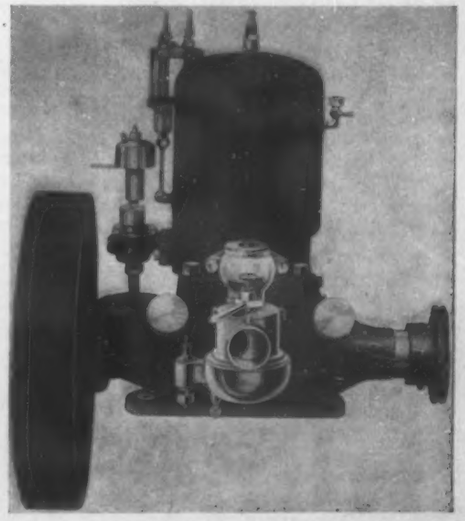
To Make the Engine Run The Havoline Oil Company, of New York, will exhibit at the New York Show a full line of oils and greases especially prepared for the requirements of motor boats. They will also have a display of illuminated pictures of well-known boats, such as the Dixie III, which have used their products during the past season with pronounced success.

The Havoline Oil Company will occupy space No. 93 at Madison Square Garden.

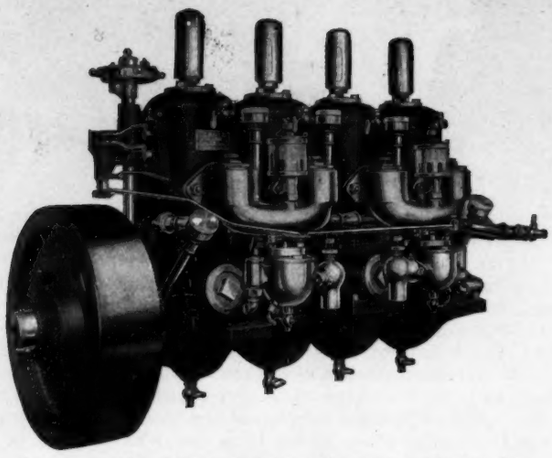
The advantages of using a grade of oil that will produce the best results and leave the least carbon deposit in the cylinders are rapidly becoming recognized by engine users in all parts of the country, and for this reason the matter of lubrication is being given more attention by boat owners than ever before, and this exhibit will hold the interest of all boat users.



The 1911 Model R double-cylinder Gray Motor, in 10 and 12 H. P.



The 1911 Model R single-cylinder Gray Motor, in 3, 5 and 6 H. P.

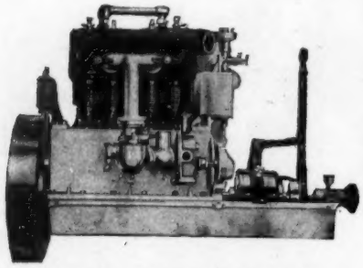


25-H. P., high-speed, four-cylinder Eagle Engine, Model 4C.

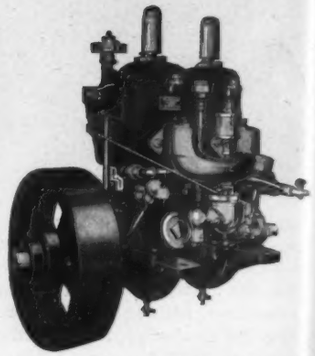
A Large Nest of Eagles The Eagle Company, of 98 Warren Street, Newark, N. J., makers of the Eagle engines, which have become so popular in the last few years, will have a particularly large exhibit at Madison Square Garden, consisting of a complete line of their engines which are made in seven models and fifteen sizes, ranging from 1½ to 25 horsepower, and in from 1 to 4 cylinders. One of each of these models will be exhibited at the Show.

These engines proved so satisfactory last season that no material change in model has been made, although among the minor refinements will be noticed the slotting of all screw heads, the use of all copper-asbestos gaskets and improved designs in individual parts wherever possible. The Model F engine, in 2½ horsepower, single cylinder, has been provided with inspection plates, while the Model T, stationary, is equipped with a sensitive and efficient governor, acting directly on the carburetor or throttle. These engines are equipped with either make-and-break or jump-spark systems of ignition. The 1911 make-and-break device will be the same as that furnished last year, as this mechanism proved so satisfactory that not a single replacement had to be made throughout the season.

In addition to the full line of Eagles above described, the Eagle Company will exhibit two new models that they have brought out this year. These will be known as Models 2D, in 12 horsepower, two-cylinder, and Model 2E, in 15 horsepower, two-cylinder, both being heavy-duty motors. The 2D model is designed to produce its rating at 450 revolutions per minute, and the 2E model at 400 revolutions per minute, and these engines will be found very powerful at these speeds. The new engines will retain all of the features common to the regular D and E heavy-duty models which have been found very satisfactory, but will have added a make-and-break control mechanism and other features common to the B and C models. They are provided with large inspection hand-hole plates, and are furnished in either make-and-break or jump-spark ignition, as are the B and C models. The crank-pin bearings are lubricated by means of oil, which passes from oil reservoirs surrounding the main bearings through holes in crankshaft directly to the connecting rod crank pin bearings. In appearance and design these new models are as pleasing as were the models which this company brought out in 1910.



Two-cylinder Scripps Motor, showing intake and reverse gear.



12-H. P., two-cylinder, high-speed Eagle Engine, Model 2C, which may be fitted with either make-and-break or jump-spark ignition.

A 20-Foot Launch that will Appeal to the Fisherman A little boat that will attract unusual attention at the Show on account of her seaworthy qualities and roominess is the 20-foot fishing boat designed and built by the Luders Marine Construction Company, of Portchester, N. Y. The first boat of this type that the Luders Marine Construction Company turned out was built to order, the only stipulation of the owner being that it should be seaworthy. The craft proved so successful in this respect, and was such an efficient and attractive little boat for all-around use, that this company decided to make it a stock model, and they are thus prepared to furnish them at short notice.

The dimensions of the little craft are: Length over all, 20 feet; beam, 5½ feet, and draft 27 inches. She is rather a deep bodied boat with sharp ends and good flare. Equipped with a 5-horsepower motor, she will make 7 miles an hour, which is excellent speed for a boat of this size. The engine is located forward of amidships, where it can be easily handled by the helmsman, leaving the after cockpit free and clear for passengers. The 20-gallon copper gasolene tank is also located under the forward deck. The steering equipment consists of a vertical lever at the 'midship bulkhead aft of the engine, which allows the steering to be done from either cockpit, and makes an extremely responsive control for a boat of this size. A wheel, however, could also be placed forward in addition to this lever, if desired.

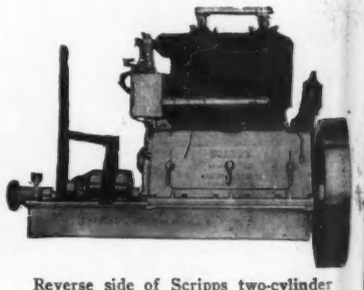
The construction of this boat is most substantial, the frame and keel being of oak with cedar planking, while clamps and stringer run in a single length from bow to stern. In the higher grades, the boats are copper fastened, and have mahogany or oak transoms and coamings, and the seats are either slatted or cushion-covered, according to the desire of the purchaser. This makes an extremely attractive little boat.

20-foot, open, stock launch, designed for fishing purposes. Exhibited by the Luders Marine Construction Company.

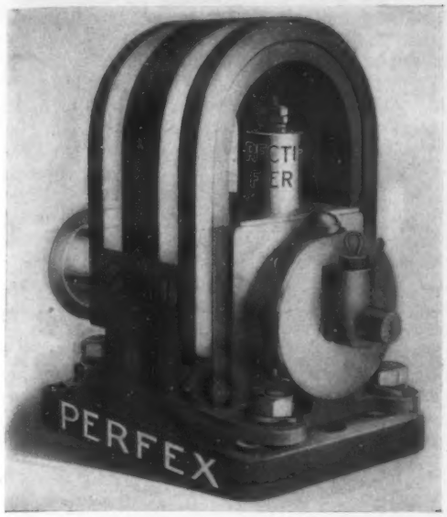
Scripps Makes a Complete Exhibit The Scripps Motor Company, of Detroit, Mich., advise that they are preparing a very complete exhibit of their 1911 models for the New York Motor Boat Show, and will have many interesting features to show to those who keep abreast of the times on marine motor construction. The changes in the new Scripps models, while interesting, are not radical, and tend to show how difficult and unnecessary it is to make any startlingly new changes on a successful motor.

The Scripps Motor Company will exhibit eight distinct sizes of their well-known motors at the New York Show. This line will include their two single-cylinder types of 4½-6 horsepower and 7-9 horsepower, the 9-13 horsepower and 12-18 horsepower two-cylinder models, the 18-30 horsepower and 24-48 horsepower four-cylinder, and the 27-45 horsepower and 48-72 horsepower six-cylinder motors.

In design Scripps' motors follow closely the accepted practices in four-cycle construction, presenting no radical or untried features. It has been this manufacturer's aim to produce highly-perfected motors of the accepted type, em-



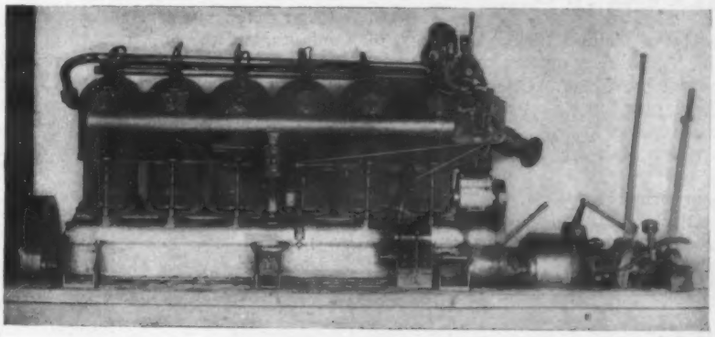
Reverse side of Scripps two-cylinder motor, made in 9-13 and 12-18 H. P.



The new Perfex, low-tension, untimed, alternating-current magneto, showing rectifier. Exhibited by the Electric Goods Manufacturing Co.

ploying only the highest grade of material and workmanship, and adding, year to year, only such new features as have been thoroughly tried out in actual service. It is but natural, therefore, that Scripps motors enjoy the highest reputation for simplicity, efficiency and durability.

The 1911 models contain a few new features which will be of interest to the prospective purchaser. A specially designed reverse gear is now carried on an extension base, resulting in perfect alignment of all shaft bearings. The new exhaust manifold is water-jacketed, relieving all expansion strains. The ignition of the four and six-cylinder models is accomplished by means of the Delco distributor system on the battery ride and a Bosch high-tension magneto, all tigh-tension wires being neatly installed at the factory. All models will carry a positively-driven air pump as regular equipment, supplying the power to operate signaling devices in accordance with government regulations. In all other respects the 1911 motors are identical with and contain all the well-tried features that characterized the models of the past season.



Six-cylinder, 7½ by 7½, Jencick air-starting, one-man-controlled motor, in 175 H. P., showing carburetor and intake.

Perfex Ignition and a New Low-Tension Magneto The Electric Goods Manufacturing Company, of Canton, Mass., will have an exhibit that is bound to interest all those who know anything about an internal-combustion engines, and especially of the ignition system by which they are operated. In addition to a full line of the Perfex ignition system which was exhibited last year, and which gave so much satisfaction last summer wherever used, this company will exhibit a new magneto which they have just placed on the market, and on which they have been at work perfecting for some time. This will be known as the Perfex Low-Tension, Untimed, Alternating-current Magneto.

Perfex untimed magnetos are simple, inexpensive, alternating-current generators, designed to furnish current in place of batteries for jump-spark ignition systems. Besides including all the advantages of ordinary low-tension magnetos, their unique features enable them to eliminate the faults of other magnetos and to incorporate several new and invaluable mechanical improvements which place Perfex in the same class with expensive, imported magnetos.

The ordinary low-tension magneto, according to the Perfex manufacturers, usually has one or more of the three following faults: (1) Choking or sluggish actions of the induction coil and vibrator of the ignition system (which cause an uneven, weak spark at the spark-plug gap); (2) a destructive "arc" or burning action between the vibrator points, and (3) a variable voltage output—necessitating the use of a governor to keep the magneto's armature within normal speed.

Explanations of how a magneto generates current; why the above troubles occur in the ordinary magneto, and how the Perfex rectifier prevents them from occurring in magnetos are given below by the Electric Goods Company.

First, the reader should know that a magneto generates electric current by causing insulated wires, wound upon iron discs attached to a shaft (which combination is termed an "armature"), to revolve in the "field of magnetism" located between the poles or ends of its permanent magnets. This current then flows into the primary winding of the induction coil, and from there via the vibrator back through the magneto into the condenser.

In ordinary magnetos the iron discs of the armature, which must form part of its construction, make a perfect "impedence coil" and act as an obstruction to the flow of the used current (called the "kick" voltage discharge) from the primary winding, causing a portion of this current to be retained in it when the vibrator points are separated and the circuit open, the same way as a boulder would obstruct the flow of water in a tailrace, and cause it to back up into and impede the water-wheel.

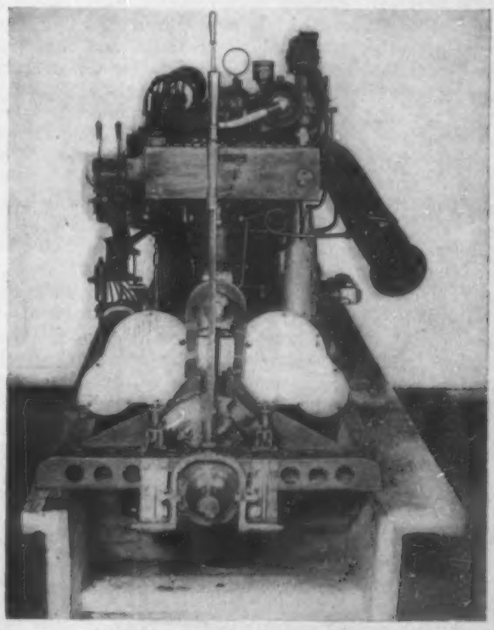
Thus, it is claimed, the primary winding of the induction coil is never freed of this used, or, so termed, "kick" voltage, and the result is a choking or sluggish action of the ignition system's induction coil and vibrator, which causes an uneven, weak spark at the spark-plug gap. The weakened spark produced corresponds to the unsatisfactory operation of a gas engine in which the exhaust valve does not fully open, thus causing part of the burnt gases to be retained and making it impossible for the engine cylinder to draw in a full charge of fresh gas from the carburetor, according to the company's argument.

The Perfex rectifier (a patented device contained in a cylinder attached to the armature housing) prevents trouble No. 1 from occurring in Perfex magnetos by providing a means scientifically and practically correct by which this "kick" voltage is discharged into the condenser without interference. Although there are no moving parts of any kind in the rectifier, its use in the Perfex magneto results, it is stated, in a wonderful increase in the gas-igniting properties of the spark at the spark-plug gap, which causes a material addition to the power of the engine.

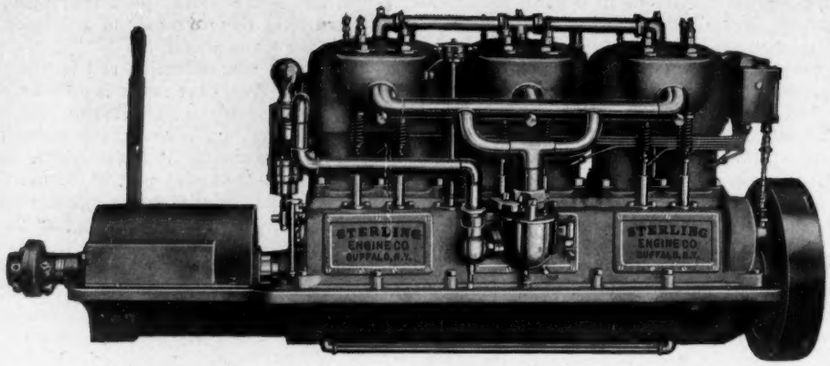
The second defect which the Perfex makers name is that nearly every engine user has been puzzled by the fact that the sparks at his vibrator points are much heavier and more destructive when he uses an ordinary 6-volt 3 to 8-ampere magneto to generate current for his ignition system than when he employs a 6-volt battery giving 20 amperes! The cause of this "arcing" or "burning" action of the vibrator points is the abnormal increase of the voltage which is normal when the vibrator points are in contact, but which more than doubles itself when the "load" or resistance of the circuit is removed when the vibrator points are separated. At this time the magneto's armature creates voltages unhampered by the resistance formed by the wire of the circuit, through which it must pass, and of the primary coil, which it must energize. In fact, it practically "races" (increases the voltage) the same as a propeller shaft races (increases its revolutions) when its resistance is suddenly removed by lifting it out of the water.

In the case of the propeller shaft a governor or a brake is used to keep its revolutions constant. In the Perfex magneto an invention, termed the rectifier, likewise provides an artificial "load" that serves to keep the voltage even and constant at all times, and whether the magneto is operating under its normal load or not. Thus the rectifier also excludes from the Perfex magneto's ignition system destructive sparking at the vibrator—and all vibrator trouble. An additional advantage claimed is the fact that the voltage of Perfex magnetos is of the alternating and not the direct-current type. As the direction of this current is reversed twice during every revolution of the shaft (combined with the aid of the rectifier), no "building up" or "pitting" of the vibrator points can occur in the ignition system for which the Perfex is furnishing current.

The third defect alluded to by the Electric Goods Company is the variable voltage output of the ordinary low-tension magneto which necessitates the use of a mechanical governor to keep the revolution per



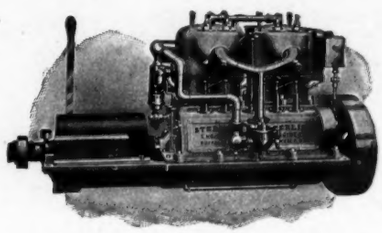
Rear view of six-cylinder Jencick motor, showing exhaust manifold and reverse gear.



The smooth, six-cylinder Model B Sterling Engine. Made in 35-55 and 45-65 H. P.

minute of its armature at normal speed. The Perfex rectifier abolishes this trouble by automatically regulating the voltage when the vibrator points separate and by automatically preventing any voltage increase should a wrong-sized pulley cause the normal speed to be somewhat exceeded. Also the rectifier effectively prevents the "kick" voltage with its intense pressure from breaking down the insulation of the armature winding, and thus removes a mysterious trouble common to the average magneto. In short, the Perfex rectifier is claimed to be the missing improvement link which has advanced the standing of untimed magnetos to a position where satisfactory operation is certain, making the use of batteries unnecessary except for auxiliary current, and providing the many users of Perfex waterproof ignition with a complete and perfected ignition system.

Two Jencick Motors The Jencick Motor Manufacturing Company, of Port Chester, N. Y., are now putting out their 1911 models, two of which will be exhibited at the Show. One of these is a large six-cylinder engine, and the other a smaller one in four cylinders, a cut of the former type being shown herewith. This larger motor is a six-cylinder, 7½ inches bore, 7½ inches stroke, the company having sold a considerable number of the same type in four, six and eight-cylinder models for high-speed cruisers and express runabouts. The policy of the Jencick Company from the first was to build only a high-quality machine; a policy which the past five years has proved to be popular with the users of these motors. With a two-year guarantee covering every outfit, the Jencick Company says the replacements which they have had to make during the life of the company has not amounted to one-tenth of 1 per cent of total sales.



Four-cylinder Model B Sterling. Made in 18-25, 25-40 and 30-45 H. P.

In the building of these motors the materials used are as follows: For all steel parts, Krupp chrome-nickel steel, EF-60 grade, and government nickel-steel are used. It is a known fact that the finest machinery steel has a tensile strength between 60,000 and 80,000 pounds per square inch, whereas this chrome-nickel steel, after oil treating, to which process all parts are subjected, has a tensile strength of 225,000 pounds per square inch, and the elasticity and elongation properties are in the same proportion in comparison with the machinery steel. This insures a strength and wearing quality far superior to common machine steel. The cylinders and pistons are of semi-steel.

The crank cases are of manganese bronze, which has a tensile strength of about 72,000 pounds per square inch, while cast iron has only from 24,000 to 28,000 pounds per square inch, and aluminum between 14,000 and 24,000 pounds.

This is a strong point, as, being the foundation of the machine, it is essential to have the strongest and best material. The main bearings are of Parson's white brass. The gas inlet manifold is made from a bronze tube running in a straight line the length of the cylinders, and of sufficient size not to cause resistance to the inrushing gases, thus giving a direct path with the minimum of resistance, producing a smooth and even running motor.

Contrary to the theories which have been advanced in the past for attaining favorable combustion and equal distribution of gases in multiple-cylinder motors, while this combustion is affected greatly by the construction and shape of the inlet manifold, the Jencick Company's experience and trials have convinced them that perfect carburetion affects the distribution of gas more than the shape of the manifold. For this purpose the best make of carburetor is used, same being constructed on the Venturi tube principle, which allows a constant flow of air, and by proper adjustment, secures a perfect running motor. Ignition is by low-tension magneto with magnetic make-and-break plugs, with a secondary high-tension system through single-cylinder coil and distributor, this being arranged with switch controlling both systems.

Cylinder lubrication is by a mechanical force-feed oiler, mounted directly on the engine; lubrication for the base is taken care of by a gear pump placed in the bottom of the case. Reverse gears used with the Jencick high-speed, light-weight motors are of their own make, being of vanadium and chrome-nickel steel, and made in two types—positive locking and disc. The air-starting device used on these motors is shown in the cut on page 141, and is of the simplest type and positive in action. The compressor is mounted directly on the engine, and is specially made for the purpose by the Jencick Company. It is of the water-cooled type, having a capacity of 220 pounds pressure, and can be easily engaged or disengaged.

When the installation is made the operation of the oiler, the pressure of the oil, the speed of the motor, air pressure, reverse gear and spark and throttle controls are all arranged in such a way that the operator can easily see what is going on without having to go over the engine, making even the largest sizes a one-man motor.

An Engine with a Sterling Reputation It has always been the aim of the Sterling Engine Company, of Buffalo, N. Y., in making an exhibit of their marine motors to have it as complete as possible, and the one at Madison Square Garden at the 1911 Show will be no exception to the rule, but, on the other hand, will be the largest and most complete ever assembled by this company.

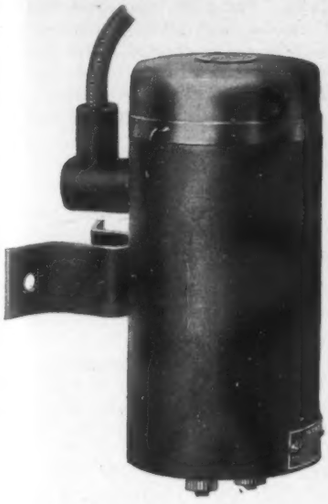
In their four-cylinder, four-cycle model B engines one each of the 18-25 horsepower, 25-40 horsepower and 30-45 horsepower will be shown. It will be noted that these engines have two ratings—a higher and a lower; the lower rated power is developed at a speed of about 600 revolutions per minute, and the higher rated power at a speed of about 900 revolutions per minute, although for speed work these engines can be run at as high as 1,100 revolutions per minute. The same thing can be said of the six-cylinder model B Sterling engines, which come in sizes of 35-55 horsepower and 45-65 horsepower. One description will suffice for all of the sizes mentioned above.

The cylinders are cast in pairs, an arrangement which reduces the number of joints and the possibility of leakage to a minimum. The cylinders and valve seats are thoroughly water-jacketed, the lubricating system is positive, being metchanically operated, and as moving parts run in oil wear is reduced to a minimum. Valves, both inlet and exhaust, are mechanically operated, insuring absolutely positive action, are placed on opposite sides of the engine and are interchangeable. Push rods are adjustable, and push rod guides are heavy and extend almost the entire length of the push rod. All gears and cam shaft, in fact everything essential to the operation of the engine, are covered, leaving nothing exposed. All parts are easily accessible. The reverse gear is one of this company's own design, and is placed in an extension of the lower base. These engines make suitable power for semi-heavy cruisers, launches and cruisers using twin-screw. They are also very desirable for fast runabouts and racing boats.

The 100-horsepower, eight-cylinder model B engine is one that is used for fast runabouts and racing boats. In design and construction these engines are practically the same as the four and six-cylinder engines described above. It is one of these engines that drives the famous La Truda, which is claimed to be the fastest 32-foot boat in the world, having repeatedly defeated all the boats in her class on the Great Lakes.

The Sterling Fisherman engine will be shown in two sizes—the 8 horsepower and 12 horsepower. These engines develop their rated power at a speed of 400 revolutions per minute, and make a very desirable, medium, slow-speed engine for hard and continuous work, for fishing boats, family launches and cruisers. The cylinders on these engines are cast in one pair. Cylinders and valve seats are thoroughly water-jacketed; the lubricating system is a positive-operated oiler, mechanically pumping the oil to the sight feed, then pumping to other points of lubrication. Valves, both inlet and exhaust, are mechanically operated, insuring absolutely positive action, all being placed on opposite sides of the engine and being interchangeable. Other features of this engine are practically the same as those of model B.

Probably the most interesting part of the Sterling Engine Company's exhibit will be their heavy-duty engines. There will be shown one each of the 18-horsepower, two-cylinder, 40-horsepower, four-cylinder, and 60-horsepower, six-cylinder engines. These engines develop their rated power at a speed of 400 revolutions per minute. The same Sterling features are used on these engines as on the smaller sizes, thereby insuring Sterling standard construction.



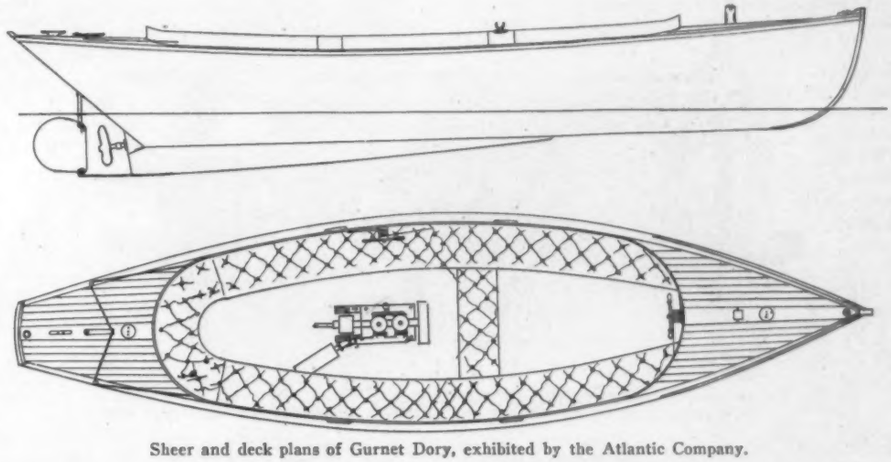
Pfanstiehl No. 14 Tubular Coil.

Magnetos, Spark Coils and Switches Among the exhibits of engine accessories and ignition systems at the Motor Boat Show, that of the Pfanstiehl Electrical Laboratory, consisting of spark coils, magnetos and specialties, will command attention by reason of its completeness in everything pertaining to the ignition end of a marine outfit.

The Pfanstiehl Junior magneto is one of the important developments in gas engine ignition brought out during the last decade. This machine produces an alternating current, and is used in connection with a vibrating coil for ignition purposes. In the case of single-cylinder engines, this coil is mounted in a fiber tube and placed under the magnets, making a very compact unit of ignition. The alternating current practically eliminates all vibrator trouble in the coil. The efficiency of this machine is such that the makers guarantee it to start any engine on the crank. The drive is by friction pulley, belt or gear. It contains absolutely no wires or windings of any kind. There are no intricate parts. By a clever use of the principles of magnetic hysteresis the machine is self-governing, showing remarkably efficient results in low speeds, while at high speeds it is impossible to damage the coil or give an excessive output. In addition to engine ignition, the Junior magneto will run three six-volt, six-candle power Tungsten lamps.

This magneto may be used for ignition on multiple-cylinder engines in connection with two, three, four or six-cylinder coils. It has been used with great success on automobiles for both ignition and lighting. The best bronze bearings are used and the finest grade of imported magnetic steel. This machine is designed to sell at a low figure, and is within the reach of all manufacturers of low-priced engines. In addition to this the Pfanstiehl Laboratory expect to exhibit a full line of marine dash, vibrating and non-vibrating coils and spark coils of the Badger type. Among the vibrating coils of interest will be a No. 14 tubular coil for direct attachment to the cylinders of the engine. This coil is mounted in a fiber tube with a spun metal cover and brackets for attaching coil.

There will also be seen the Pfanstiehl improved combination timer and distributor device, together with battery and kick switch and a self-contained dual high-tension magneto.



Sheer and deck plans of Gurnet Dory, exhibited by the Atlantic Company.

The Atlantic Dories and Launches No Motor Boat Show at Madison Square Garden would be complete without a fleet of Atlantic dories. In the past, exhibits of the Atlantic Company, of Amesbury, Mass., have always attracted great attention among those who know what a boat should be both in design and construction. The exhibit this year will comprise all the regular line of Gurnet dories, 18½, 20½, 23½, 25½ and 30 feet in length, together with the semi-speed clipper launches of 25½ and 30½ feet.

In addition to these well-known models the Atlantic Company have brought out a new 16-foot dory skiff, equipped with 3-horsepower motor and priced at $165, which is destined to become very popular wherever a shoal-draft boat is required.

The boats exhibited will be equipped with the regular Atlantic type of two-cycle, three-port engine for the smaller boats, while in the larger sizes the Atlantic Special three-port, two-cycle engine will be used.

Conforming with the usual practice the Atlantic Company will also have on exhibition a high-speed runabout that will make 25 miles per hour with 40 horsepower, handsomely finished in natural mahogany, which will, as usual, attract those who care for the fast and classy things in the motor boat line.

The construction and the finish of the Atlantic Company's boats is so thorough and workmanlike as to thoroughly delight the man who knows a good boat when he sees one. One of the strong points of the construction of the Atlantic boat is the method in which the bilge strake is cut out in sufficiently heavy planking to allow being of the same thickness as the other planks after being hollowed out, instead of being thinner at the turn, and less liable to check or split. The Atlantic boats, being built in large number, with a maximum of careful machine work, allows accurate fitting to be obtained at a cost impossible for anything like the same degree of workmanship when a small number of boats are turned out individually by hand, which accounts for the moderate price, considering the workmanship, at which these Atlantic boats may be obtained.

Pfanstiehl Junior Magneto, which produces an alternating current.

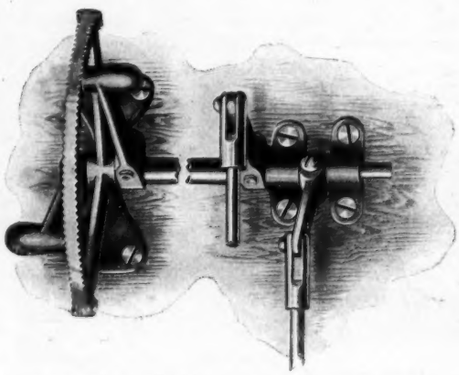
An Air Pump Whistle Equipment and Accessories In the last few years, since the activity among the government inspectors as to the equipment of motor boats has been so pronounced, everything pertaining to the boat's outfit that comes under government regulations has been of peculiar interest to motor boat owners. For this reason the exhibit of Messrs. W. & J. Tiebout, of 118 Chambers Street, New York City, consisting of motor boat accessories and supplies, including whistle, pump, light and fire extinguishing equipment, will be sure to attract much attention. The exhibit of this concern will be particularly complete in all its branches, but exceptionally so in regard to their whistle outfits. This whistle equipment consists of a compressed air outfit, operating a chime whistle which may be placed in any place on the boat that is desired. Instead of the storage tank being charged by the cylinder compression or by the burnt gases from the exhaust, this system is operated by a Tiebout Star air pump This pump eliminates all possible danger of explosion, being operated a cam attached to the propeller shaft, where it is out of the way. This pump is designed to meet the demand for a

The Tiebout Star Bilge Pump attached to propeller shaft.

W. & J. Tiebout's Star Air Pump, showing split cam and hinged boxes.

United States Government Life-Boat equipped with 40-H. P. Holmes motor.

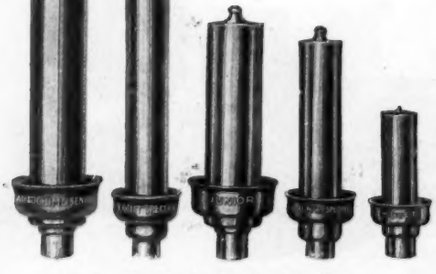
reliable machine at a reasonable price for charging storage tanks with compressed air for blowing whistles and for all purposes where compressed air is required. The following are some of its good points: It is small, requiring but 3½ inches of space on the propeller shaft and 10 inches in length; it can be put on either side of the shaft, and no appreciable extra power is required to operate it; it is compact, strong, simple of construction; nothing is liable to get out of order; the whistle can be blown in 30 seconds after starting the engine; it will pump a 10-gallon tank up to 60 pounds pressure with 450 revolutions in ten minutes; there are no foul smelling gases from burnt oil, or gas from cylinders when whistle is blown; no gas is pumped into the tank—just air; it can be attached to any size of shaft by detaching shaft from engine, slipping on cam and pump arms, or it can be made with split cam and hinged boxes on pump arms, so as to attach without detaching shaft from engine. When sufficient air has been pumped into the tank by a shift of the lever, the piston is held back, leaving the cam to revolve with the shaft without coming in contact with pump piston, stopping all wear and friction. In addition to this W. & J. Tiebout have a Star bilge pump working on the same principle and the same manner as the air pump, being attached either to the propeller shaft or operated by friction with fly-wheel.



Gray-Hawley Bulkhead Spark and Throttle Control. Can be mounted either horizontally or vertically.

A Holmes Motor in a Government Lifeboat It is not often that the United States government appears as an exhibitor at a boat and engine show, but at the forthcoming exhibition at Madison Square Garden, Uncle Sam has taken space and will exhibit in the restaurant of the Garden his new 36-foot lifeboat for the lifesaving service, equipped with a 40-horsepower motor. This exhibit is made by the government for its educational purposes and from a desire to give the people a general idea of what is being done to save life and property at wrecks. The motive power of this boat is a 40-horsepower Holmes gasolene motor, showing that the government does not intend to under-power its new craft.

Next to this government exhibit will be that of the Holmes Motor Company, in which they will exhibit a full line of Holmes medium and heavy-duty four-cycle motors. These are open base motors, made in horsepower from the smaller sizes up to 90 horsepower, to suit any type of boat for which power is desired. The Holmes Motor Company has made an enviable record with their motors during the past season, both in pleasure boats, working boats and in the racing field. Their exhibit will undoubtedly hold the interest of everyone who goes to the Garden.



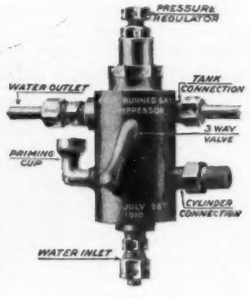
Gray-Hawley Autochime Whistle.

An Interesting Collection of Practical Accessories The Gray-Hawley Manufacturing Company, of Detroit, Mich., are showing for 1911 an even more splendid line of motor boat accessories than that which has already made them famous for quality and convenience. It does not take one long, after examining the Gray-Hawley products, to realize the fact that whoever designed their motor boat accessories was an actual boat owner and enthusiast.

This is a fact, because Mr. E. P. Gray, who is responsible for all the articles turned out by the company, not only designed his own cruising motor boat, but also designed each and every one of the company's boat fittings originally for his own use—that's why they're so extremely good.

One of the Gray-Hawley line is the Gray Burned Gas Compressor, which is built to stand daily use throughout the season without attention. It is automatic, absolutely reliable and will furnish ample pressure for all signal requirements. The illustration herewith shows it attached to the side of engine cylinder. The priming cup has been removed from the cylinder, and the steel nipple furnished with the compressor has been screwed into this opening.

The compressor is water-jacketed throughout, the water connection being made with any part of the cooling system desired. When the handle of the three-way valve is turned up it closes the port leading to cylinder; when turned down it starts the compressor, and when turned halfway it opens the connection with cylinder and priming cup on compressor, and the engine may be primed through same. The three-way valve is patented and is only furnished on the Gray compressor. It is a very desirable feature, as it permits priming through the compressor, and when in a priming position the port leading to the tank is closed and no gasolene can possibly get into the air tank.



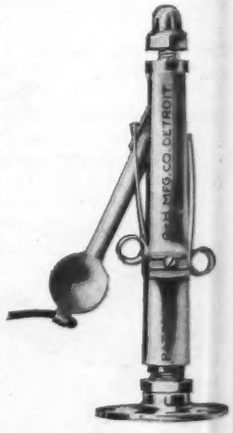
Gray-Hawley Burned-Gas Compressor for automatically charging whistle tank.

A piston check valve, with guides to insure proper seating, is placed directly above the three-way valve in the water-cooled part of the compressor. A bronze spring, placed above the travel of the burned gas, presses against the upper end of the piston. An adjusting screw regulates the tension of the spring, so that it holds the piston valve to its seat during the compressing stroke of the engine, and thus unburned gas cannot enter the air tank.

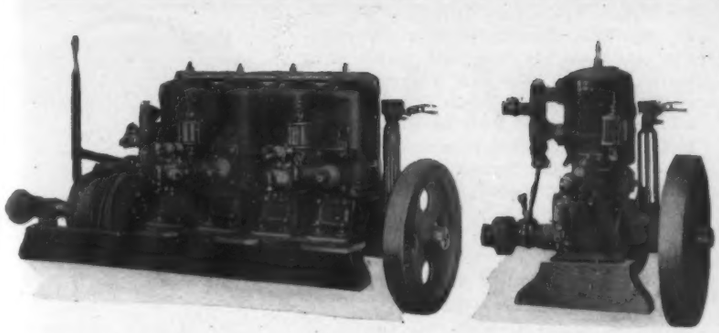
There is sufficient difference between the compression and the pressure when the charge is exploded in the cylinder to store a pressure of burned gas in the tank of from 50 to 100 pounds. When the pressure in the tank, plus the tension of the spring, is equal to the force of the exploded charge, the pressure on valve is equal, and it will not rise to permit more pressure getting into the tank. When the whistle is blown, or the pressure in the tank drops, the valve in compressor will start rising, and will work until the lost pressure is replaced, making it automatic.

The piston valve is 1 inch long, and the clearance between it and the water-cooled wall of the compressor is less than 1/64th of an inch. It is a known fact that it is impossible for flame to pass through an opening this small; and, again, the burned gas, having been spread into such a fine sheet and brought into contact with the water-cooled wall, is cooled considerably below the firing point, thus making the Gray compressor absolutely safe. This feature is also covered by patents.

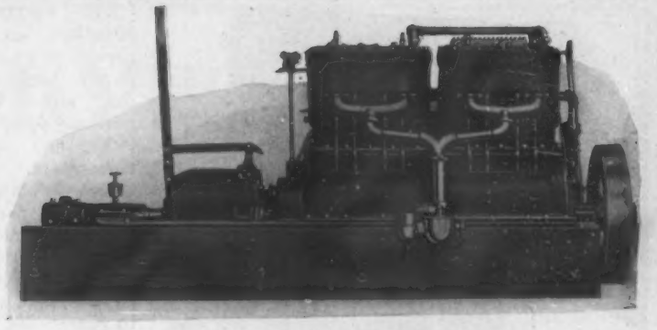
Next to the compressor, the most important part of a signal outfit is the whistle. It must operate successfully on a pressure of from 5 to 100 pounds. It must have a powerful distance-carrying blast and consume the minimum amount of pressure. The Autochime whistle, which for



Gray-Hawley Clapper Device for fog bell.



5-H. P. Single-Cylinder and 18-H. P. Medium-Duty Termaat & Monahan Engines.



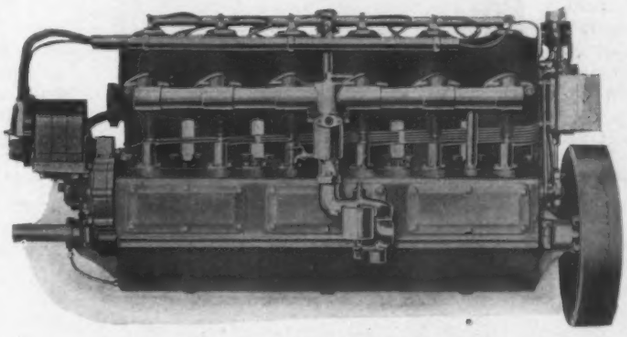
Four-Cylinder, 40-H. P. Ideal Engine.

years this company has claimed to excel in these features, is broadly covered by patents and differs from other whistles. The sound openings are surrounded by a cup-shaped bell, which protects them from the wind and has a megaphone effect on the sound waves. Holes are placed in the bottom of bell to prevent its filling with water. The Autochime is small in diameter, but long. The small diameter requires less air and the length gives it a deep tone and volume.

Whistles naturally make one think of fog bells. The Gray fog bell is something that will delight the heart of every boat owner. It can be placed on deck or on top of cabin, and no matter how rough the sea the bell will not ring until the cord is pulled. By simply loosening the lock nut the bell may be instantly unscrewed from deck plate. It is efficient, durable and handsome. It is just what every motor boatman, especially the owner of a small craft, has been looking for. It is also an ideal signal bell, being 8 inches in diameter. To those who do not wish to discard the bells which they already have, the center post and non-rolling clapper device of the fog bell may be obtained separately and fitted to bells already in use.

The Gray gasolene filter is bristling with so many good points that it's almost impossible to mention them all, but those that will most strongly appeal to the experienced motor boat owner are: The extremely small amount of clearance needed for it between the fuel pipe and bottom of boat; its top opening, allowing it to be easily cleaned without disturbing the piping connections; and the shut-off valve which it is necessary to use in connection with a gasolene filter, and which is actually a part of the Gray filter. In the lower portion of the nut, which is hollow, are placed four screens of different mesh. These screens are held in position by separating rings and a nut. They may be easily and quickly removed for cleaning by unscrewing one nut without disconnecting any piping. The three-way valve or key is accurately ground and fitted, a spring and ratchet arrangement holding it in any position in which it is set. When the handle is turned up, gasolene enters the filter at lower side, passes through the valve, up through the screens and out through the upper connection into the carburetor. Dirt, water and other impurities cannot pass through the screens, and are quickly drained by turning the handle which closes the tank connections and opens a port in the bottom of filter. When handle is turned down the tank can be drained, which permits taking gasolene for various purposes.

The latest Gray device is a very neat and effective spark and throttle control for mounting on bulkhead, and so designed that it is capable of being adjusted to any desired angle of length of throw. The illustration herewith shows the device, which is so arranged that it can be placed either vertically or horizontally. They are sturdy enough to be relied upon for use in commercial craft, and ornamental enough to add beauty to the finest motor yacht.

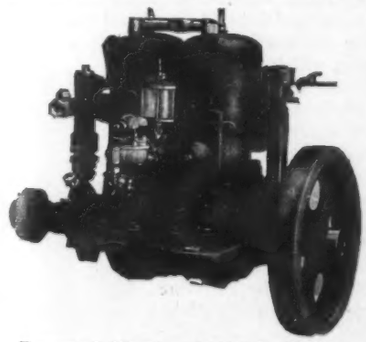


Six-Cylinder, 35-40-H. P. Van Blerck Motor.

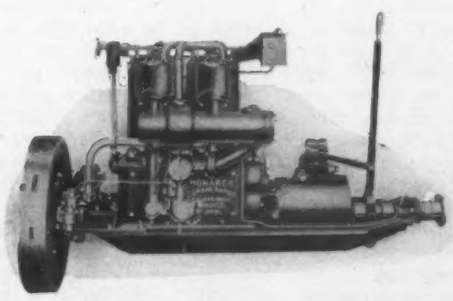
A New York Agency with a Fine Line of Engines

The Gasolene Engine Equipment Company, of 133 Liberty Street, New York City, dealers in marine motors, will have an exhibit at the Garden of various makes of engines that should be able to satisfy the requirements of any one looking for a motor for marine use, no matter for what kind of service. This company, believing that in catering to the boat-owning public and boat-building trade one should be able to supply the needs of their clients for the various types of motors for which there might be a call, has taken the New York agency for some of the best-known engine manufacturers in the trade, and will exhibit a line of their engines. This line will consist of the Monarch engine, made by the Grand Rapids Gas Engine & Yacht Company; the Termaat & Monahan engine; the Smalley engine, made by the General Machinery Company, of Bay City, Mich., and the Ideal engine, made by V. J. Emery, of Wollaston, Mass. These engines embrace the two-cycle and four-cycle type, high-speed and heavy-duty. Each of them is designed for a certain class of work, filling a need peculiar to itself, the entire line covering the whole range of marine and stationary service. The line of Monarchs shown will consist of a 14-horsepower, four-cycle, two-cylinder engine, and a 21-horsepower, four-cycle, three-cylinder engine. The former of these engines is made to operate on either kerosene or gasolene, a point which will be appreciated by reason of its many advantages, a few of which are the low cost of operation; absolute safety, the fuel being non-explosive and non-inflammable, and the fact that kerosene is everywhere obtainable. The Monarch kerosene engine's secret of success is that it can be instantly started on either gasolene, naphtha, benzine or alcohol; that it has a smokeless exhaust, giving perfect combustion, and that it has a controllable electric ignition system of either make-and-break or jump-spark. The principle of operation of this system is a dual fuel by-pass for the kerosene and for the gasolene above the carburetor.

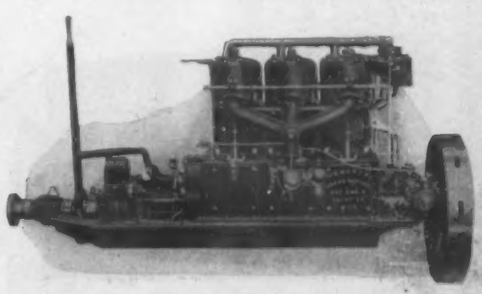
The 21-horsepower Monarch is a three-cylinder, 6 by 7, designed to make its rating at 525 revolutions per minute. This model is also made in 28 horsepower, both four and six-cylinder.



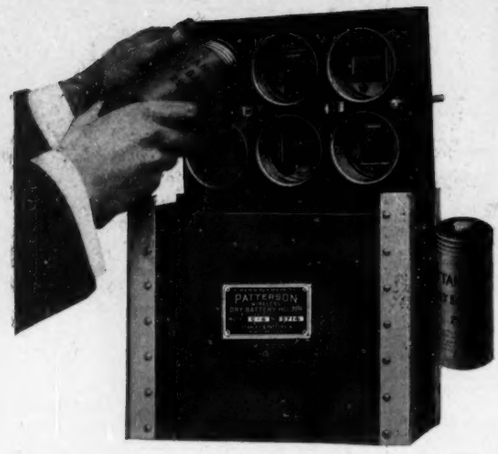
Termaat & Monahan 8-12-H. P. Medium-Duty Engine.



14-H. P., Two-Cylinder Monarch, operated on either kerosene or gasolene.



21-H. P., Three-Cylinder Gasolene Type Monarch.



Stanley & Patterson Battery, showing Hard Rubber Plate raised to screw in cartridge cells.

manship. They are of the two-port type, and the line ranges from a 3-horsepower single-cylinder to 60-horsepower double-cylinder. In addition to regular line they make a lightweight engine in 18 horsepower, two cylinders, and 60 horsepower, four cylinders. The generator set consists of 2-horsepower engine, direct connected to a high-grade ¾-kilowatt direct-current generator, secured in compact form to a substantial cast iron sub-base. The outfit was primarily designed to supply light on yachts, houseboats and cottages, also to recharge storage batteries and to operate searchlights. Generator may be wound for 50 volts and up, and still lower voltages can be furnished at slight extra charges. Fifty-volt and 110-volt outfits are carried in stock.

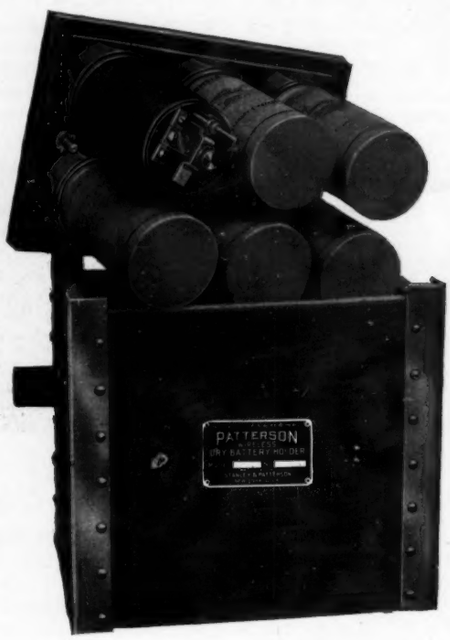
The normal lighting capacity at 110 volts is 12 16-candlepower (55 watts) lamps or 24 8-candlepower lamps, etc. This rating is very conservative.

The Smalley engines that will be exhibited by this company are the Smalley Marine and the Smalley Aero. These engines will be particularly attractive to prospective purchasers, owing to the fact that they are made of aluminum, the lightness which is obtainable with this material being such that the claim is made that these engines weigh less pounds per horsepower than any other high-class engine in the world, at the same time costing less in dollars per horsepower. These engines are made in from one to six cylinders, from 4-6 to 90-110 horsepower. Aluminum, the metal for cylinders, as used in the Smalley engines, produces a powerful engine with a particularly strong and durable cylinder. These cylinders have gray cast iron liner where piston travels, the two metals being cast together and indissolubly joined by the process which is their own invention (patent applied for), and is conceded to be one of the greatest steps forward of the decade in the gas-engine world. The two metals make cylinders stronger than any one metal alone. The Smalley engine is of the two-cycle, three-port type, and is a high-speed engine, designed to run from 900 to 1,100 revolutions per minute, and is adaptable for all classes of high-speed work.

The Ideal engine which the Gasolene Engine Equipment Company will exhibit is a medium-speed and medium-weight engine, designed for all-round work where reliability is required, the range being from 450 to 700 revolutions per minute. It is a four-cycle motor, made in sizes from 4 to 40 horsepower, and has some distinctive features which will be appreciated by those who know anything about engine construction. One of these features is the design of the exhaust port, which runs directly down into an expansion chamber between the cylinders and into the manifold, which is at the base of the cylinders, where it is out of the way, and is much less unsightly than when located near the top of the motor. This method condenses the hot, exhausted gases, thereby reducing back pressure on the engine and greatly minimizing friction.

View of Motor Boat Outfit, Model "CL-6," plate raised to screw in cells.

The Termaat & Monahan line will consist of a 5-horsepower, single-cylinder, an 8-horsepower, double-cylinder, and an 18-horsepower, four-cylinder, the two latter of the medium-duty type, and one direct-connected generating set for electric light outfits to operate on gasolene, alcohol or kerosene. These are all two-cycle motors. The marine engines are well known among boat users for their reliability and work-



View of Motor Boat Outfit, Model "CJ-6," plate raised to screw in coil and cells.

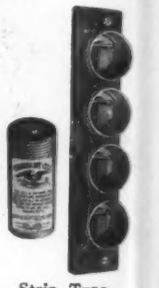
Wireless Dry Battery Ignition Systems The exhibit of Messrs. Stanley & Patterson, of 23 Murray Street, New York City, will consist of a complete line of their famous wireless and waterproof dry battery holders, which have overcome all the troubles that the motor boat owners have heretofore experienced by the deterioration of dry batteries through moisture and short circuiting.

View of Motor Boat Outfit, Model "C-6." Plate in position, batteries screwed in.

It has always been acknowledged that the dry battery is a simple and inexpensive method of motor boat ignition. The trouble with the dry cell aboard the average boat, however, has been that dampness and loose connections have played the mischief with the cells, causing them to deteriorate rapidly. Realizing the real merit of the dry cell as manufactured to-day, Messrs. Stanley & Paterson started out to produce an absolutely waterproof dry cell container that would not only provide perfect electrical connections, but would, at the same time, allow any dead cell to be removed without disturbing the cells that were in good condition.

Furthermore, with the Patterson Wireless Battery Holder there is absolutely no chance of incorrectly wiring up the cells—there is no wiring to be done—each cell being screwed into a socket, and as easily removed therefrom as an Edison bulb from its socket. The Patterson Wireless Dry Battery Holders are built in various sizes, ranging in capacity from 4 to 24 dry cells, and in different finishes and grades of elaborateness; but all of them, from the cheapest to the highest priced, have, in common, the same absolutely waterproof features and the same method of inserting and removing the cells from their respective sockets.

In some of the holders, by an ingenious arrangement of a switch control, it is possible to vary the amperage and voltage as occasions may require, and in deference to the wishes of those who desire to keep their coils absolutely waterproof, Messrs. Stanley & Patterson have placed on the market screw-cap cartridge coils in both make-and-break and jump-spark patterns, that will interchange with one of the dry cells in the battery holders, thereby allowing the owner of an open boat to carry ashore with him each night his entire ignition system, an advantage that the motor boat man will greatly appreciate. These wireless battery holders prolong the life of dry cells from 25 to 50 per cent, because once the cells are screwed into the socket connections and lid fastened down, the only falling off in amperage or voltage will be due to actual use. These holders are not only used extensively for ignition purposes, but the larger sets, containing from twelve to sixteen dry cells, connected up in series-multiple, four cells to a series, and giving a 6-volt current, are coming into use as a method of furnishing current for sailing lights on small craft in connection with candelabra base, 5 and 6-volt low candle-power Tungsten lamps. The illustrations herewith show but a portion of the many styles and sizes in which these wireless dry battery holders are built—the great range of styles, running from the simple strip which may be screwed underneath a locker seat to the elaborate combination plate outfits in which voltage and amperage may be varied at will. This insures a Stanley & Patterson wireless outfit being suitable in dimensions and capacity.



Strip Type Holder, Model A," not mounted

A Complete Line of Van Blerck's The Van Blerck engine has earned such a high reputation for itself in speed boats, especially on the Great Lakes and tributary waters, that the full line that the Van Blerck Motor Company, of Detroit, Mich., will have on exhibition at the Garden will be a treat for Eastern boat owners. These motors range from 12-15

(Continued on page 168.)

HOLMES MOTORS

FOR 1911

THE 1911 output of THE HOLMES MOTOR CO., will include a strictly HEAVY DUTY TYPE of motor in sizes from 25 to 65 H. P. These HEAVY DUTY MOTORS will embody the original features of HOLMES construction, reliability, simplicity, long stroke and water cooled exhaust. The Holmes Co. have solved the problem of operation cost in a marine engine. In other words, when you buy a HOLMES the FIRST COST is practically the LAST COST. This has been accomplished in two ways—SIMPLICITY and ACCESSIBILITY. By reducing the number of parts you have the SIMPLE ENGINE. By making the engine accessible you wipe out the tremendous overhauling charge which every boat owner is forced to stand yearly, the necessity to dismantle an entire engine in order to make what should have been a simple adjustment. But we have not overlooked the fact that RELIABILITY is absolutely necessary to the safety of a boat under ordinary conditions. HOLMES Motors are eternally reliable and can be depended upon to start and run and keep running.

36-Foot Life Boat Equipped with 40 H.P. Holmes Motor.

We shall Exhibit at the New York Motor Boat Show at Madison Square Garden a Full Line of Holmes Medium and Heavy Duty Motors.

Our Exhibit will be placed in the Restaurant of Madison Square Garden next to the Exhibit of the U. S. Government which has taken space suitable for the display of the New 36-foot Life Boats equipped with 40 H. P. Holmes Motors.

Our 1911 Catalogue is now ready.

THE HOLMES MOTOR CO.

NEW YORK OFFICE, 1 MADISON AVE. **WEST MYSTIC, CONN.**

Of Interest to the Skipper

An Able 37-Foot Cruiser with Some Distinctive Features

It is the exception when naval architects or builders break away from the conventional in power boat designs, and for this reason the 36-foot cruiser from the boards of the Bayonne Launch Company, of Bayonne, N. J., will prove of interest to those who follow closely the development of power craft. One of the distinctive features of this boat is the arrangement of what might be called a bridge deck, which is let down into the raised deck directly over the engine, located just forward of amidships. In reality this forms a sort of shallow cockpit-well, 4 by 4 feet, from which the boat is handled, the steering wheel being placed on the raised deck just forward of this steering cockpit. This is a particularly good arrangement, as it allows the engine control to be easily brought up through the flooring without having to be carried any undue distance. The extension of the raised deck is carried aft in a trunk extending directly to the covering boats on either side, with square windows, giving plenty of light and ventilation. Instead of the usual cockpit aft, the deck beyond the trunk cabin is left flush and is surrounded by a rail carried on stanchions.

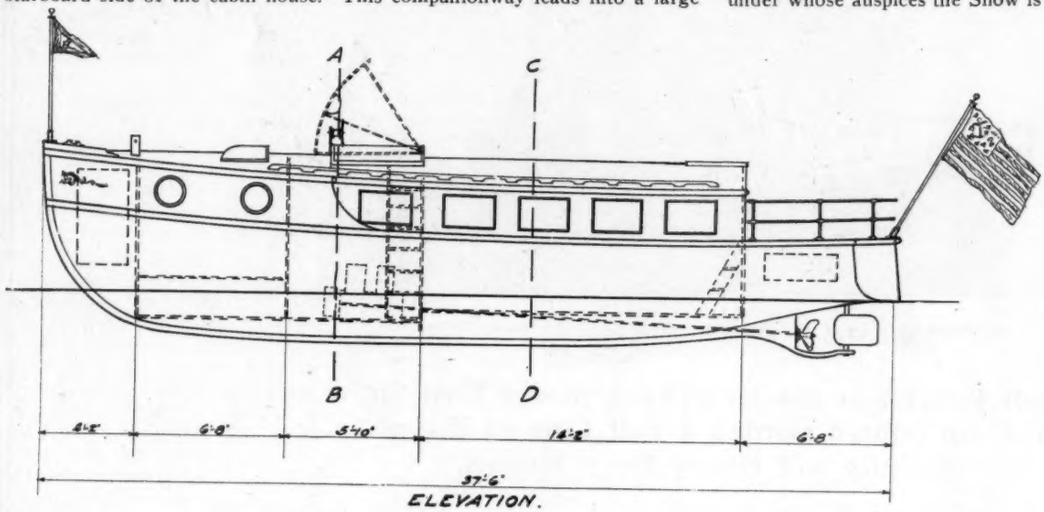
The dimensions of this boat are: 37 feet 6 inches over all, with a generous beam of 11 feet 3 inches. The boat is particularly roomy for one of her length. She is practically all boat, and her interior accommodations give a 14-foot 2-inch main cabin with a stateroom containing two berths forward of the engine space, something that is very unusual in a boat of this size. The entrance to the cabin is by a companionway in the after starboard side of the cabin house. This companionway leads into a large main saloon, well lighted with four windows on either side. Four cot beds are provided for this saloon, and these can be set on either side and curtained off, thus transforming the saloon into two staterooms. During the day these cots are stored under the floor, leaving a large main saloon furnished with easy chairs and other conveniences.

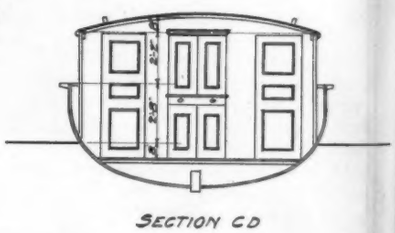
At the forward end, backed up against the engine bulkhead, is a dresser. On the port side of this engine space is a toilet room, 3 feet 6 inches long, while on the starboard side is a passageway leading forward into the galley and stateroom. The galley is on the starboard side, with full head room under the raised deck, while on the starboard side is a large ice-box. The intervening space faces the engine. The stateroom forward is entered by a swinging door and has a built-in berth on either side.

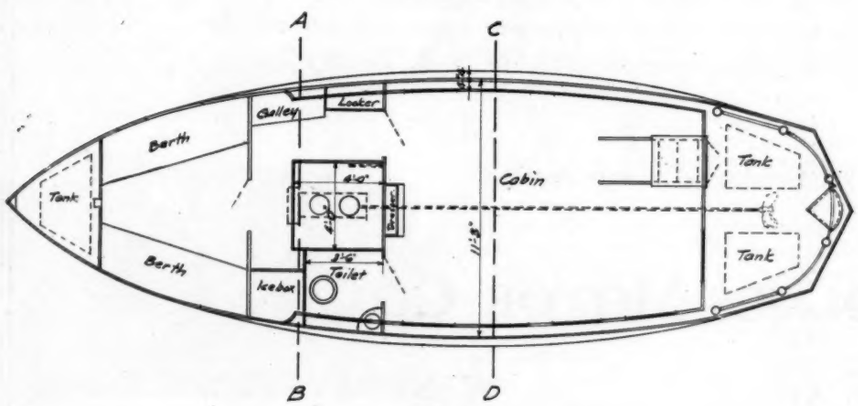
The power plant consists of an 18-horsepower, two-cylinder engine, which will drive the boat about 10 miles per hour, and which will also run a dynamo for lighting purposes and a bilge pump. The engine room is ventilated by a grating in the floor of this steering bridge, thus preventing any fumes and gases from collecting in the saloon. Tanks are provided forward and under the flush deck aft for gasolene and fresh water supply. This after deck is 6 feet 8 inches long, and is left free for the use of deck chairs. The boat is built and finished in the very best manner, the saloon being in quartered oak with windows arranged to drop down within the wainscoting, and she is electric lighted throughout.

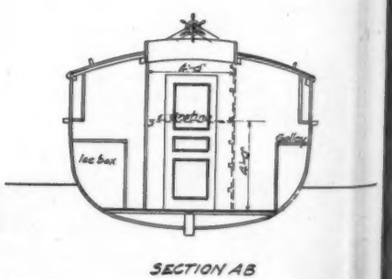
The Boston Show

There is no doubt in the minds of those who have ever attended the National Motor Boat Show in Boston that it is one of the most interesting exhibitions of power craft held in the country. The New England Engine and Boat Association, under whose auspices the Show is held, are progressive and up-to-date, and









Sheer and Accommodation Plans and Cross Section of 37-foot Launch designed by the Bayonne Launch Company.

EVENTUALLY

YOU'LL BUY A

PATTERSON BATTERY SET

For Your Motor Boat Ignition!

Patterson "Multiples" have Renewable Units!

From $5.00 up to $30.00

So why not NOW?

And From This Season Forget All Battery Troubles!

OVER 10,000 ARE IN USE, BECAUSE THEY SAVE MORE THAN THEY COST

At all Dealers or of

Send for 16-Page Art Catalog, No. 101

Stanley & Patterson

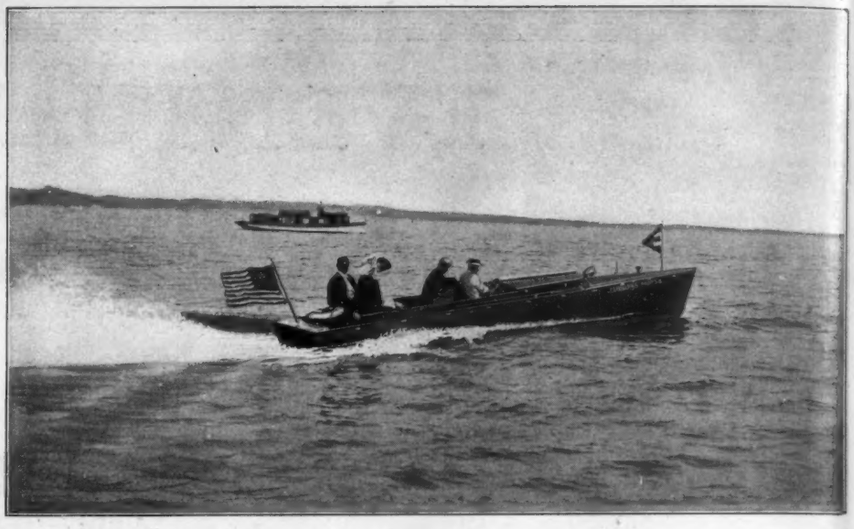
SOLE MANUFACTURERS

New York, U. S. A.

under the able management of Chester I. Campbell each year shows an improvement.

That this year's Show is no exception is proved by the great list of boats, engines and accessories to be found there. In fact, no one who contemplates buying a boat this year can afford to miss this Show even if he has to come a long distance, and he will be amply compensated by the opportunity of seeing practically every known make of boat and engine.

The line of accessories will be especially extensive, and the present owners of boats will find many of the latest appliances for adding to safety and comfort afloat. Many novelties to attract the visiting public will also be shown, notably the speed boat Br'er Fox that made the noted run; a hydroplane; a new ice motor boat and some very interesting models of boats and ships.



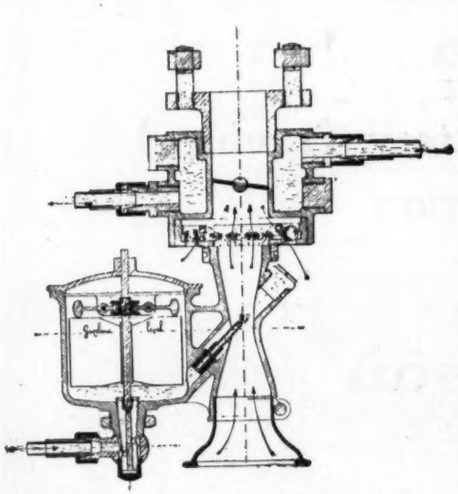
Fairbanks-Morse Demonstrating Boat, which made a run from Chicago to the Gulf of Mexico.

A Demonstrating Boat The demonstrating boat Fairbanks-Morse attracted a great deal of attention in the Mississippi and Ohio River Valleys during the past summer and fall, having made an eventful trip from Chicago to the Gulf. Particular interest was shown at Cincinnati, at points along the Ohio River, at Peoria, Ill., Jacksonville, Fla., Pensacola, Fla., and at many points in the vicinity of Tampa. The boat was designed primarily for dependability, comfort, durability and easy and satisfactory performance. She is equipped with one of Fairbanks-Morse 24-horsepower, four-cylinder, type "G," two-cycle, three-port marine engines, which is undoubtedly responsible for the great success of her trip and the widespread interest in her achievements. The model of the boat and her equipment are particularly commendable to the man who wants comfort and perfect freedom from cares and worries.

A Real Automatic Carburetor As the carburetor is the most vital, sensitive and important part of a gasolene engine (and also the most abused) it will be of interest to the readers of YACHTING to learn that there is now a carburetor on the market for which the claim is made that it is automatic under all and any conditions. It never requires adjustments after being properly placed on the motor, and is absolutely fool proof.

As early as 1900, Messrs. Granville & Arquembourg, makers of automobile appliances, undertook the solution of the carburetor problem on a scientific basis. They erected a special laboratory, and with the aid of the most famous French engineers set to work to devise an automatic carburetor having no springs or diaphragm valves in the construction and few parts as possible. The result of their labors, which covered a period of four years, was the production of the G. & A. carburetor, which has been manufactured in seven countries under the same patents for the last seven years.

As a basis for the carburetor these French experts took the Venturi tube, which is a tube made of two cones, one of 7 degrees, the other of 30 degrees, joined at their narrowest parts. Experiments demonstrated that in this shaped pipe the suction is four times as great at the restricted parts as if the pipe were perfectly straight. Further experiments showed that there is a point where the depression caused by the flow of gases in this pipe is exactly proportional to the volume of gases that flow through it. As the amount of gasolene fed to the spray nozzle, which is located at this point, is exactly proportional to the depression, it is obvious that the mixture will be constant for a certain size nozzle. As motor requires more air at higher speeds than can be taken through the main air inlet, which in this case is the Venturi tube, provision had to be made to supply auxiliary air. Admitting auxiliary air presented no obstacles, as this was common practice. Usually the auxiliary air was admitted by diaphragm valves controlled by springs, which had to be adjusted at any change of temperature, or by the use of dash pots and other complicated devices. As Granville & Arquembourg did not want to use dash pots or valves controlled by springs, they set to work and devised a cage of balls for the admission of auxiliary air, that was free from any complications and which could not possibly get out of order. This cage consists of a brass ring with a vacuum chamber on top pierced by holes of different diameters, in numbers from 12 to 20, according to the size of the carburetor. These holes were stoppered by bell bronze balls of different weights and sizes. As the speed of the motor increases over a certain limit the lightest ball lifts, allowing a set amount of air to slip by. As the speed is further increased other balls lift and increase the area of the air space. In this way the admission of auxiliary air is accomplished without the use of valves or springs, and creates a kind of mechanical turbine by swirling the air around and mixing the gases.



Cross section of G. & A. Automatic Carburetor, showing spray nozzle at narrowest part of Venturi tube, and Auxiliary Air Inlet.

To prevent freezing and condensation on low throttle, a new type of heater was invented. The heater consists of a metal wall completely surrounding the mixing chamber and throttle, which is of the well-known butterfly type. Hot water from the motor is taken into the heater, which is of very large capacity, and led to the intake of the pump. This caused a constant suction of hot water in the heater, and the mixture is soon warmed. Tests have shown that with this arrangement a saving of one-tenth of a pint per horsepower-hour is effected, which amounts to a saving of a good many gallons of fuel in a season. The G. & A. carburetor is well adapted for marine work, and is used by some of the most prominent manufacturers of marine engines as standard equipment. They are also used on high-speed government gasolene-driven torpedo boats.

Mr. A. Herzig, of 1777 Broadway, New York City, the American agent, will be pleased to give any further information desired and send copies of the new G. & A. catalogue to those who write, mentioning this paper.

Keep the Brass Bright As more elbow grease is expended on polishing brass aboard a boat than in any other work, a good metal polish is a thing that is always appreciated. Gilt Edge Metal Polish first began its shining mission nearly twenty years ago, and the steadily increasing demand for it has proven to the manufacturer that the public appreciates an article of real merit.

The growing popularity of Gilt Edge Metal Polish among yachtsmen and boat owners the past few seasons has stimulated the manufacturer to place on the market a polish which is specially adapted to withstand the effects of salt water and dampness, and at the same time will impart a brilliant and lasting luster to all metal work. When buying Gilt Edge Metal Polish the purchaser can rest assured he is not only getting full value for his money but that he is not paying for acids, lye, ammonia and many other poisonous substances, the effects of which are to destroy the metal surface wherever applied. Gilt Edge is prepared in both liquid and paste forms, and a generous sample will be forwarded to any reader of YACHTING who will communicate with the maker, W. H. Cross, 29 Murray Street, New York City.

Some New Speed Boats and an International Cup Defender Commodore James A. Pugh, president Chicago Terminal Company, and owner of the Disturber, is preparing to give Western yachtsmen a look at a real speed marvel, and has been busy for several months investigating various types of boats and speed engines. He has finally decided on the combination of Emerson engines and Fauber hydroplane. Mr. Fauber, of France, who designed the Pioneer, that

(Continued on page 154.)

IN CONTRACTING FOR A YACHT OR LAUNCH

Which is Best?

To depend upon a middleman with SUB-CONTRACTS in every department or to have a GUARANTY backed with strong financial resources by AN ESTABLISHED FIRM TO DESIGN, BUILD, EQUIP AND FURNISH the boat in each and every particular? To have an unquestionable warranty for workmanship, materials, delivery and speed, backing such guarantee not only by money value but also by reputation and experience? Correspondence is solicited with those to whom this latter proposition appeals.

Gas Engine & Power Co. and Chas. L. Seabury & Co.

(CONSOLIDATED)

MORRIS HEIGHTS, NEW YORK CITY.

LOEW VICTOR ENGINES

THE STANDARD LINE OF THE WORLD

The LOEW is today the most desirable engine in the marine field in Design, Equipment and Price. It is the only engine manufactured under a system where no hand work is done—thus insuring absolute fit at any time for any replaced part.

TESTING THE LOEW—The matter of testing is of supreme importance. Each Loew Victor Engine, no matter what the price, is assembled and taken to the testing room. Gasoline is connected up to the carburetor and the engine tested with its own equipment. The engine is then crated for shipment, and no part of the engine or its accessories is removed. This insures the purchaser an engine fully tested with its own equipment and no adjustments are necessary to be made.

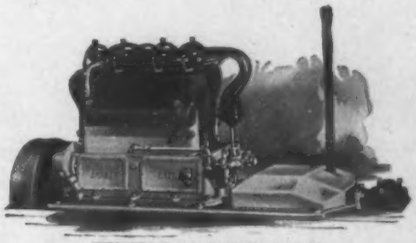
A VERY COMPLETE CATALOGUE SENT FREE ON REQUEST

This booklet is illustrated profusely and contains much valuable engine information. Send for it now whether you are expecting to buy an engine now or some time in the future. Get acquainted!

THE LOEW MANUFACTURING CO.

150 Madison Avenue, Cleveland, Ohio

FOUR-CYLINDER SPECIAL—Furnished complete as illustrated—two separate systems of ignition, operating on two separate sets of spark plugs and driving current from two separate sources. Battery and magneto, reverse gear, carburetor, automatic oiling system and air compressor are included, and the engine is furnished with this regular equipment only—no changes made. Made in either Iron or Aluminium. Prices on application.



TWENTY TO THIRTY H. P.

Driftwood from Along Shore

A Proposed One-Design Class for Long Island Sound

A new one-design class of small sail boats for use on Long Island Sound is being promoted with the idea of forming an inter-club one-design class, something similar to the Larchmont inter-club class of last summer, but with a somewhat smaller boat. Four or five yachtsmen have already signified their willingness to build to this class if enough boats are assured to make good racing with a fair number of starts at the different regattas.

Plans have been drawn for this class by C. D. Mower. The proposed boats, which are 27 feet 3 inches long, were designed to provide a popular size boat at a very moderate price, and the designs of Mr. Mower show a mighty comfortable and able little boat and one which should prove extremely fast. The principal dimensions are as follows: Length on deck, 27 feet 3 inches; length on water-line, 17 feet 3 inches; beam, 7 feet; draft, 4 feet 6 inches; ballast, 800 pounds lead, all outside; sail area, 350 square feet, with all spars to be solid. An estimate on these boats has been had from a well-known firm near New York of $660, including sails and equipment, with high-grade material and workmanship and all fittings of the best. YACHTING would be glad to put anyone interested in touch with those who are promoting the class.

From the Jersey Coast

THE VENICE PARK YACHT CLUB

The opening of the club house Christmas week was a great affair from start to finish, and at that time it was announced that 150 of the summer colony of Venice Park had sent in applications for membership. As the club will hardly offer accommodations for more than 300 active members the board of managers were more than delighted with the good news. Mayor Franklin P. Stoy as master of ceremonies gave to the few days of jollification the proper momentum, and he made the guests of the new club feel the hospitality of their surroundings in that subtle manner which is his and only his.

With the departure of the guests workmen are again on the premises rushing to completion work which was dropped for the opening. By April 1 all will be in readiness for the permanent possession of the club members.

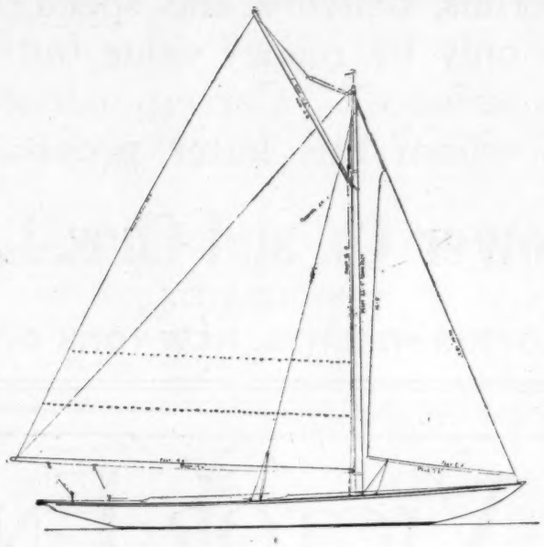
OCEAN CITY YACHT CLUB

On December 21 the Forrest Theatre, in Philadelphia, was the scene of the annual midwinter gathering of the club members. It was the annual benefit, and from the way the boys turned out it looks as though lack of money would not stand in the way of anything next season. To date $1,000 has been turned over to Treasurer Wilson. The show was not bad, but as the night was the first that the boys had been together since the last meeting in September, the ladies were deserted between the acts, and in the lobbies and smoking rooms fleet captains, regatta committee, skippers and crews gathered once more to talk of the good days of the past and the balmy days to come. Old arguments were renewed and races were sailed over again. "Herb" Smith's new 47-footer was discussed and its possibilities of outsailing Capt. Riley's present winner. Capt. John Zurn, in the smoking-room, missed the entire third act, telling the boys what his Katherine II would do to Harvey Lake's Bayou Queen and Capt. Cummings' Little Haste. But while this was going on, Capt. Cummings and Harvey Lake were down in the orchestra circle, so the issue will remain in doubt until old summer comes again.

SEASIDE YACHT CLUB

At the next meeting of the club, which will be the annual mid-winter "revival," a big effort will be made to obtain the personal support and financial backing of the entire membership for a bigger and better club house, and a renewal of the old-time yachting spirit which for the last fifteen years has given the Seaside Club its fame and prestige, but which very recently has been on the wane.

This dormant condition is due to the desertion in the ranks of many of those members who made the club what it is. Death has claimed a few of these, but many others have been divorced from active interest in the club by business enterprises which now claim their entire time and attention. But we are going to have them back with us next season. The club doesn't need the money but merely the actual presence of these men on its docks when the weather is warm and the regatta day pennants are run up to yard arms. We don't want the old men with us "in spirit" when the season is on; we want them on the dock when the races are run off, and we want them to build boats to compete with Walter Reed's champion Vanish and Commodore Parker's Happy Princess. Then the old days will be quickly revived, and a few hours of recreation every week will soon become indispensable to the boys who have allowed business to take them away from the club. The death of Col. Thomas Potter has taken away a staunch friend of the club, an admirable character, and one of the finest sportsmen who ever sailed the sea.



LONGPORT YACHT CLUB

Much interest is manifested in the announcement that Vice-Commodore Wootton will bring to Longport in the early spring a new 36-foot cabin cruiser, which he recently purchased in the upper Delaware. Commodire Wootton states that after two years of search for his ideal he has at last found a boat that suits his every requirement. The Duchess, as he has renamed the new prize, combines every convenience known to modern yachting and power boat cruising—ample head room in the cabin and enough berths to accommodate a party of six. The lines are graceful, with plenty of beam for seaworthiness and light draft for Grassy Bay. Every inch of space is utilized, and the captain's stateroom is snore-proof. This boat will make an imposing addition to the fleet.

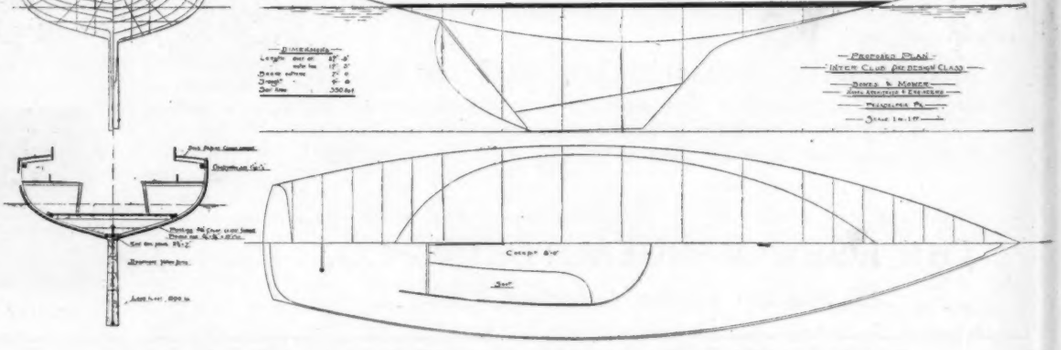
RALPH HARCOURT.

Harlem Yacht Club Election

The annual meeting and election of officers of the Harlem Yacht Club were held on Wednesday, January 4, 1911. The following officers were elected for the ensuing year:

Commodore, Fred. B. Bragdon; vice-commodore, William F. Burrough; rear commodore, Philip J. Fox; secretary, Edward Schmidt; financial secretary, Joseph C. Fegan; treasurer, Edward J. Martin; chairman race committee, Walter S. Sullivan; measurer, John Wimmer; fleet surgeon, Dr. T. A. Martin. Trustees, class of 1911, William Strauss, Joseph J. Lyons, John F. Jarchow; class of 1912, Edward M. Hartman, Karl F. J. Seifert, Henry M. Shember.

The report of the treasurer shows the club in a very prosperous condi-



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STANDARD IGNITION DEVICE

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"In all my experience I have never found an ignition system so absolutely satisfactory as the Splitdorf."

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WATERPROOF POWER-ADDING

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TEST IT YOURSELF!

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"FUNDAMENTALLY DIFFERENT"

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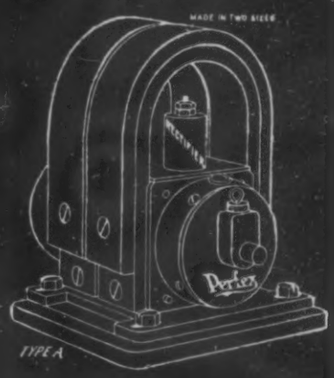

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Driftwood from Along Shore

(Continued from page 152.)

tion, and with the officers and board of trustees elected at this meeting there is every assurance of a continued success. The club will, as usual, in addition to its annual regatta, hold the annual cruising race to Stratford Shoals and return, which event has become one of the most popular features in Long Island Sound racing.

The club has added to its membership many owners of small racing yachts, owing to the fact that the club affords winter storage for members' yachts and also marine railways.

Of Interest to the Skipper

(Continued from page 150.)

attracted the eyes of the world in the Harmsworth Cup event, will furnish an improved design of this boat for the hull, and Mr. Victor Lee Emerson, president and engineer of the Emerson Engine Company, who designed the engines for the Emerson, which made such remarkable speed last season, will supply the engines. Mr. Pugh and Mr. Fauber, in company with their engineer, spent several days at the factory testing the engines. While the power is not made public, it is stated that the boat, which will be 32 feet long by 5 feet beam, will not weigh more than four pounds per horsepower, including all equipment, and the engines will weigh about two pounds per horsepower. Immediately after the test Mr. Fauber expressed himself as being confident that the boat would exceed a speed of 53 miles per hour. The boat will have far more power than the Pioneer, with less than one-third the weight. Mr. Pugh will confine his racing to the Lakes and Western waters.

Mr. J. Stewart Blackton, of New York, will also treat the Eastern yachtsmen to a surprise in the way of a speed marvel that is being constructed by the Emerson Engine Company, with a view of making a strong bid for the Harmsworth Cup and other noted trophies. This boat will exceed in power and lightness anything that has ever been constructed, and Mr. Emerson expects that the speed-reach will be in excess of 50 miles per hour.

Down on the Florida Coast, Mr. W. F. Harris, owner of Insurgent, will treat the speed sharks to a real sensation in a 26-footer, equipped with a 300-horsepower Emerson, which the company is now preparing for him; while George Gringis, the well-known racing man of Rockledge, Fla., W. S. Blood of Terra Cie., G. M. Marshall of New Smyrna, and W. A. B. Worley of Jacksonville, Fla., will fight a battle royal for the Flagler trophy at Palm Beach, and are equipping with 125-horsepower Emerson, light-weight special racing motors. W. D. Hall, of Chicago, has also been stung by the speed bug, and is having Mr. Fauber design a special hydroplane for a 125-horsepower Emerson; while Sydney Breeze has eyes on the Monaco end of the racing and has just equipped a small hydroplane with two of the Emerson 300-horsepower special racers.

Alexander Peacock, of Pittsburg, as usual, is up to date and has just put an Emerson 125-horsepower special in his new hull Brigand, designed by Crane, and which has shown remarkable speed. E. M. Hughes, of Louisville, Ky., with a 125-horsepower Emerson engine, is preparing for the Mississippi. L. Traver, of Poughkeepsie, N. Y., is getting his "old reliable" in shape, with his new 150-horsepower Special, and is doing 37 miles per hour trial spins in the new boat he has recently brought out.

One of the largest equipments now completed and awaiting launching at the Emerson Engine Company's yards is for Edward Hatch, of New York, the engine having eight cylinders, 7¼ by 8 inches, and a 40-foot mahogany hull.

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LIQUID OR PASTE

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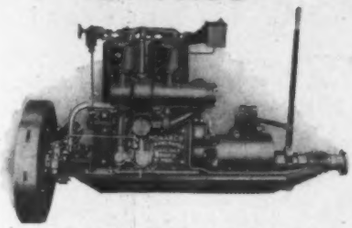
NO CATALOGUES

BY-PASS



2-Cylinder 6 x 7—16 H. P. at 525 R. P. M.

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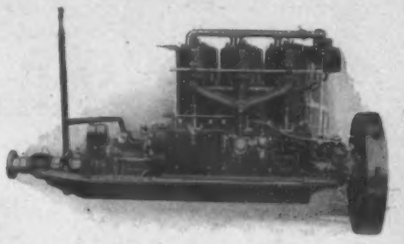
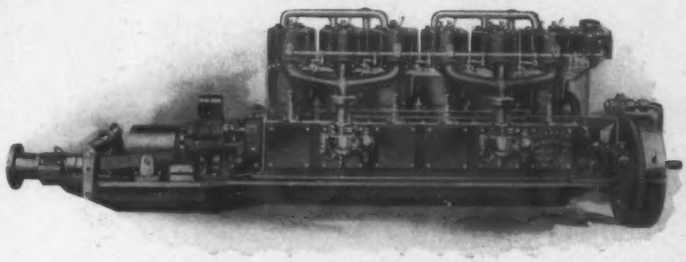
THE ONLY ENGINE OPERATING EQUALLY WELL on EITHER GASOLENE or KEROSENE



3-Cylinder 6 x 7—21 H. P. at 525 R. P. M.

The patented by-pass used exclusively on Monarchs is the only device which allows of perfect combustion, when using Kerosene, thus preventing all unpleasant odor in boat or at exhaust. ∴

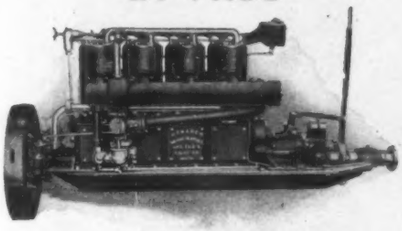


6-Cylinder 6 x 7—42 H. P. at 525 R. P. M.

Note arrangement of Clutch for Pilot House Control and geared down or easy Starting Device.

Monarchs are automatically governed—no racing on neutral, and are equipped with magneto, our own reverse gear and air compressor. Either make and break or jump spark at option of purchaser. ∴ ∴

BY-PASS



4-Cylinder 28 H. P. at 525 R. P. M.

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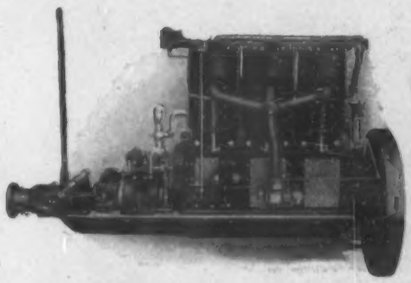
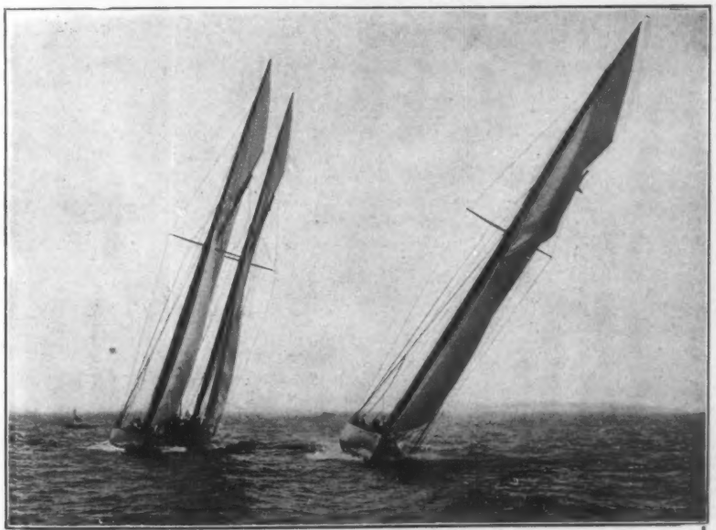


3-Cylinder 10 x 10—60 H. P. at 325 R. P. M.



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Mr. Manufacturer:—Can you afford to cast suspicion on your product by the neglect of the wiring of the ignition system which is as important as it is small? Remember failure here puts your boat at the mercy of every wind that blows endangering the lives of all on board. Remember that you cannot push your boat into a fence corner and walk home as many a good automobilist has done. Don't expose yourself to fool-hardy dangers for the sake of a few cents greater **first cost**—it is eventually the cheapest.

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It lasts for years, where others barely last a single season

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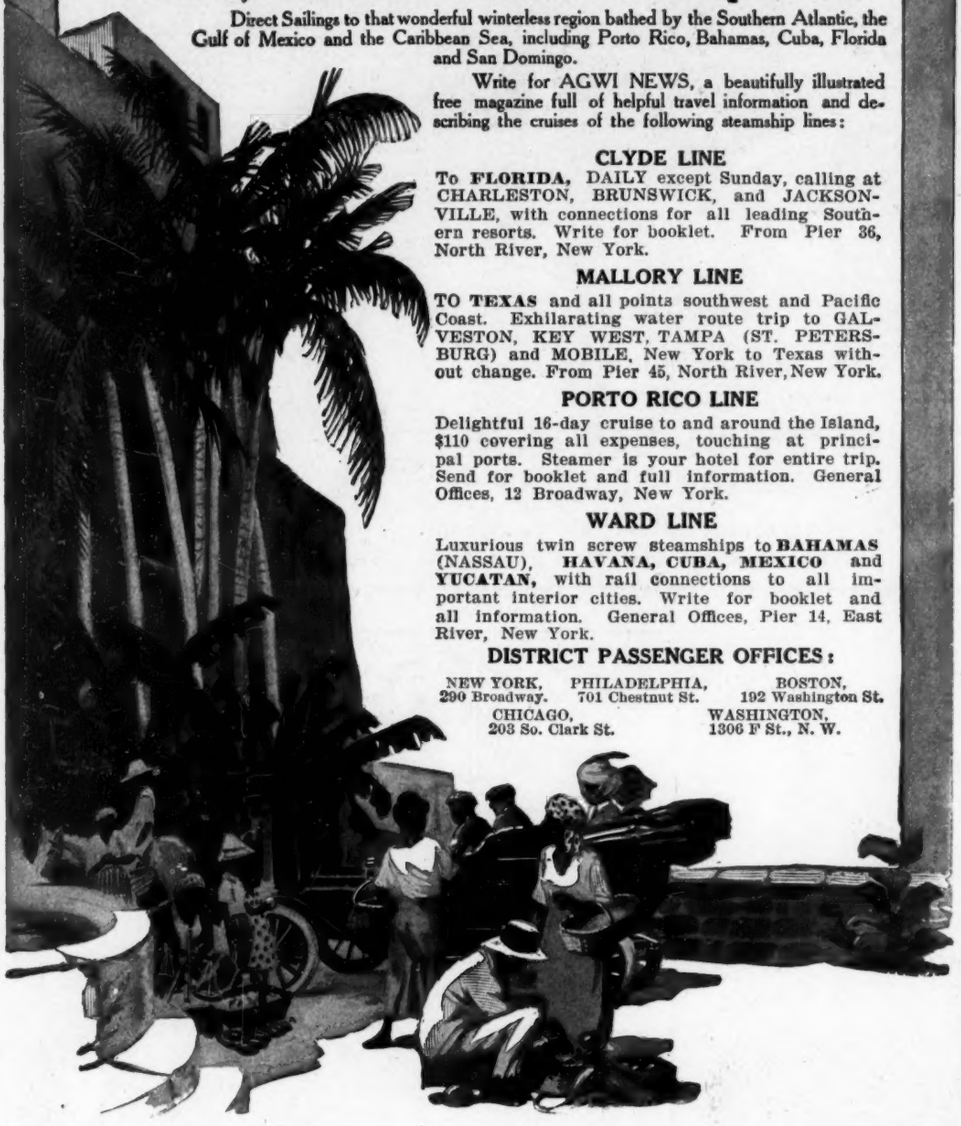

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N. Y. YACHT, LAUNCH AND ENGINE CO.

Morris Heights New York City

Up the West Coast of Florida

(Continued from page 103.)

pounds of ice and a drum of gasolene. Did some varnishing and sent a telegram home to let them know that we were not out in the hurricane. We saw the steamship Manteo dock at 7 p. m., and the captain of the Ursa went over to interview her master as to the weather. He reported a heavy sea outside, and that they had plunged their bows under until 4 p. m., but that it was now rapidly going down.

Wednesday, September 14. Barometer, 30.06; thermometer, 6 a. m., 78 degrees. There was no wind at all in the bay during the night. We left Panama City at 5:02, there being a heavy swell on the bar running just short of the breaking point, and after passing the bell buoy we set the course S. E. ½ S. There was no wind at all but a tremendous swell running outside. We crossed Cape San Blas Shoals at 10 o'clock, and set our course for West Pass bell buoy, which we reached at 11:25. There was a strong tide running out and we rolled heavily, running before the swell. We passed Apalachicola and Carrabelle without stopping in order to make Duer Channel before dark, but just before we got there we had some heavy rain squalls, so we tried to get into Alligator Harbor, but came to the conclusion that an alligator was the only thing that could get in, for we found so many lumps that we gave it up in disgust, hauled off into deep water and anchored for the night at 6 o'clock.

Thursday, September 15. Barometer, 30.08; thermometer, 6 a. m., 78 degrees. We were up and under way at 5 o'clock, feeling our way out with the dinghy ahead, and passing Southwest Cape bell buoy at 6:25, when we headed E. S. E. ½ S. for Cedar Keys, distance 80 miles. Lost sight of land at 7 a. m., and picked it up again at 12:35.

Any one attempting to make Cedar Keys from the northward has reason to criticise Uncle Sam by reason of the weakness of Sea Horse Light, as it is one of those fourth-class lights built on top of the keeper's dwelling, and the trees have grown up around it so that from many directions it is entirely concealed. As the water is discolored for some 25 miles out by the Suwanee River it is, of course, impossible to judge the depth. When we made land, the captain found that he was getting in rather close, so he threw over the lead and found 6 feet. Headed S. W. to get off shore, and after a few minutes ran over a 5-foot lump. We kept this course until the land was once more out of sight, and then headed S. to pick up the light, which we did at 3:35 p. m. We met 18 spongers just going out after having been laid up for the blow. Crossing Sea Horse Reef we soon passed the buoy and anchored off docks at Cedar Keys at 6:30, after thirteen and a half hours' running.

Friday, September 16. Barometer, 30.08; thermometer, 6 a. m., 76 degrees. We were up and under way at 4:40, and after passing No. 1 buoy headed S. by E. for the Highlands. The sky was overcast and wind N. E. After running this course for a while the sea got so heavy that we decided to work in closer and make Withlacoochie sea buoy, putting up the jib to steady her. When we reached the buoy the sea seemed to be increasing, so we ran in past the anchorage and anchored in 2 fathoms of water, the beacon bearing N. by W., 3 miles distant. When the tide turned the wind went down somewhat and we got under way, steering S. W. ½ W. for an hour and a half to clear a point of shoal which makes out opposite the mouth of Crystal River. We then headed for St. Martin's Reef buoy, as it was so rough that we were afraid to risk going inside the lumps on the

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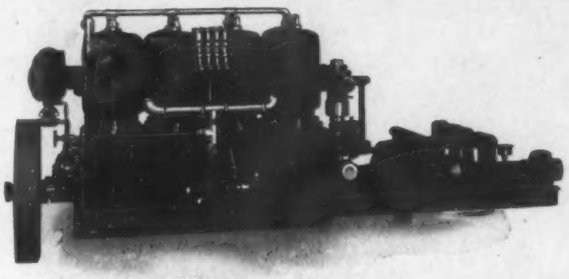

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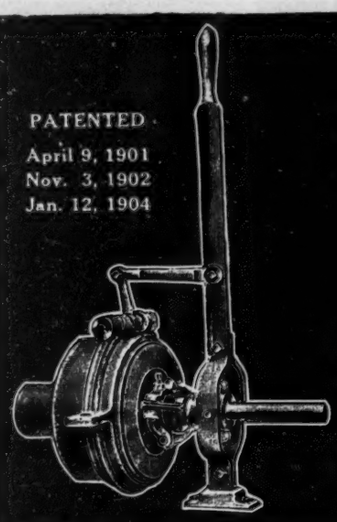

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reef, as we did not care to find any 6-foot spots in that sea. The tide set us well off shore, and when we had run out our time the buoy was nowhere to be seen. The sea was getting heavier and the wind increasing, so we changed the course to E. S. E., setting the jib to steady her. On heaving the lead we found we were some 6 miles outside the buoy, so we ran in and picked it up and headed for the N. W. channel to Anclote Anchorage. This was the roughest weather we had encountered on the trip, and with the jib still up we ran the whole way with our deck awash. It was dark before we picked up the red flashlight at Anclote, and, of course, we could not see the buoy, so we ran in until the light bore S. by W., then headed S., using the lead until we got 1½ fathoms, when we anchored for the night at 7:45, in by no means a smooth berth. The captain, however, preferred a rough anchorage with water under him to a smooth one on a mud flat.

Saturday, September 17. Barometer, 30.01; thermometer, 5 a. m., 74 degrees. Sky overcast, wind strong N. E. We were up early and found ourselves within 500 feet of the buoy we had been steering for. We got under way at 6:12, and ran through the anchorage, passing thirty-one vessels, mostly schooners, with some sloops and Greek boats, and after passing No. 2 buoy in the Southwest Channel, we headed for the Highlands. We passed into Tampa Bay and around Mullet Key at 11:25, and here got the full force of the N. E. wind, which had before been broken by the shore. While crossing the bay with the wind abeam, we undertook the feat of eating dinner, and so apt had we become that we accomplished it without losing more than 60 per cent of it. A little after noon we landed at Palma Sola, where the mate deserted the ship, and the captain was forced to carry her on alone to Bradentown, which was reached about 1 o'clock, and where he was greeted by his family, who were waiting on the dock for him, having been notified by the pilot station as soon as we entered the bay.

Southward Under Power and Sail by the Inside Route

(Continued from page 113.)

We had only a distance of 10 miles to travel before reaching the Chesapeake and Delaware Canal at Delaware City, and needless to say we were anxious to get there for a safe harbor, to afford us a good and quiet night's rest. There was one thing in our favor, and that was the tide, and we were soon out fighting the blow. Reaching the canal before dark, and paying our lock fees at the first lock, we tied up for the night. While at supper we began jollying each other and wishing all the bad weather were over. We joked about the fishermen and Pic's holding on to the anchor rope, and were soon laughing, which is about the best thing to do, after it is all over, instead of getting disgusted and having the blues. We realized the long distance we had ahead of us, and that it would not do to get discouraged when only the weather was to blame.

At sunrise the next day we were up and under way. passing in the canal several pleasure boats *en route* from wintering in Florida and bound for their Northern homes. After going a few miles we again had trouble with the carburetor, but after tinkering with it Lang soon had it in working order. For the entire trip through the canal we used the engine, and nothing of importance happened until we had passed through the last lock, where we went aground because of a change of buoys in the center of Black Creek. Before dark we reached the head of Chesapeake Bay, and going but a short distance we anchored for the night.

(To be continued.)

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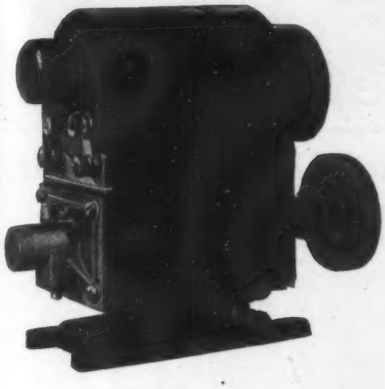

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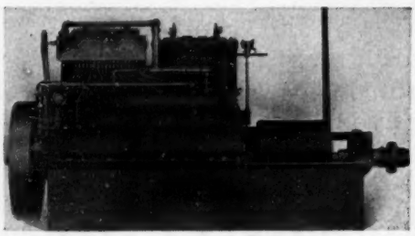

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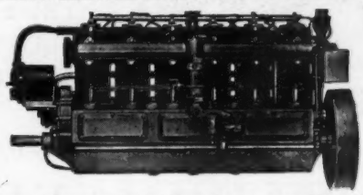

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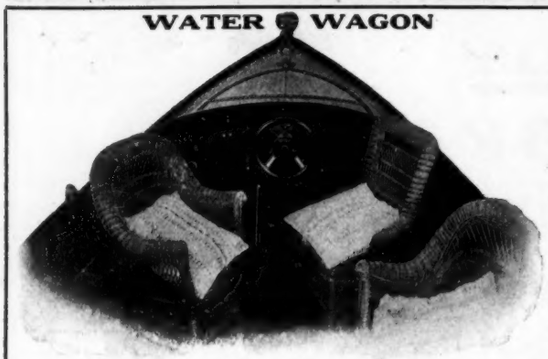

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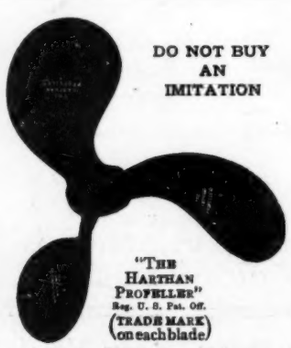

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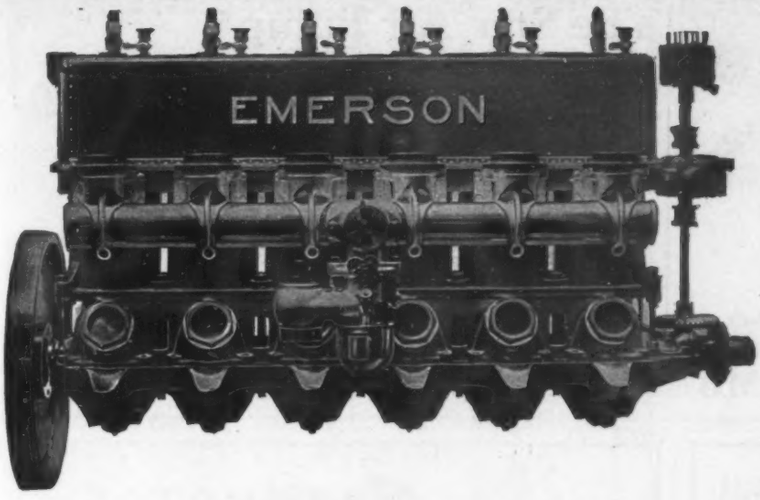

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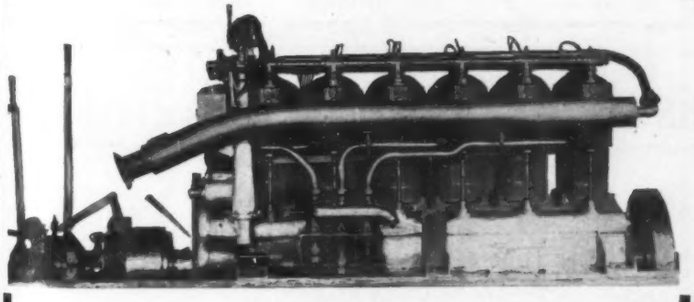

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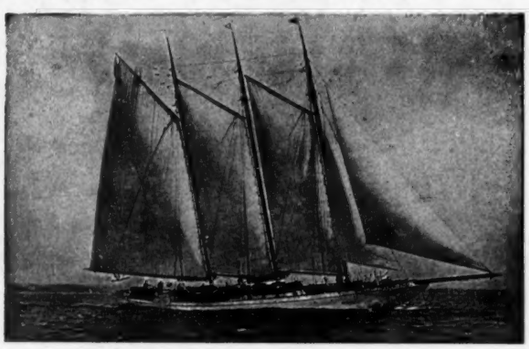

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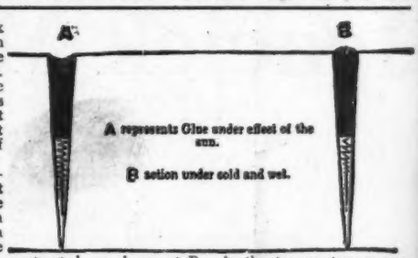

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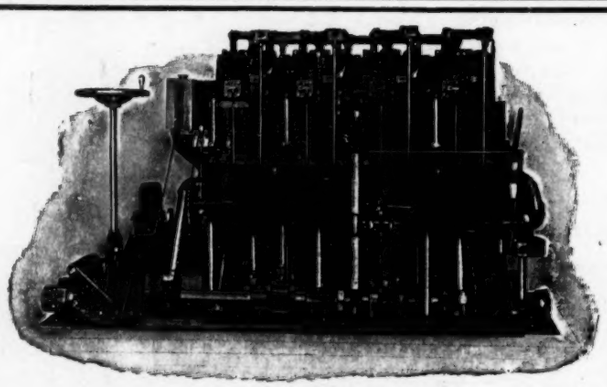

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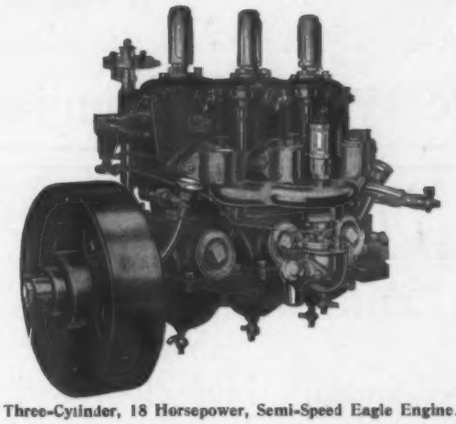

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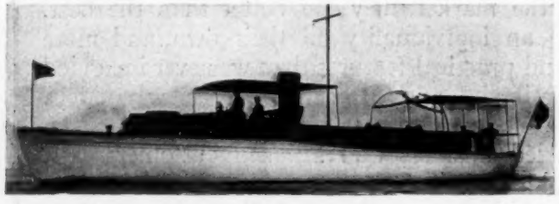

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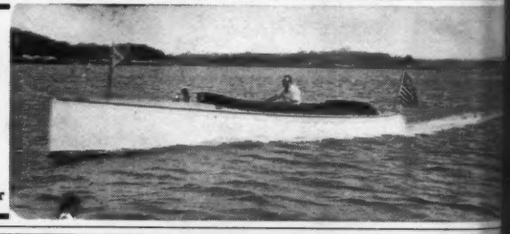

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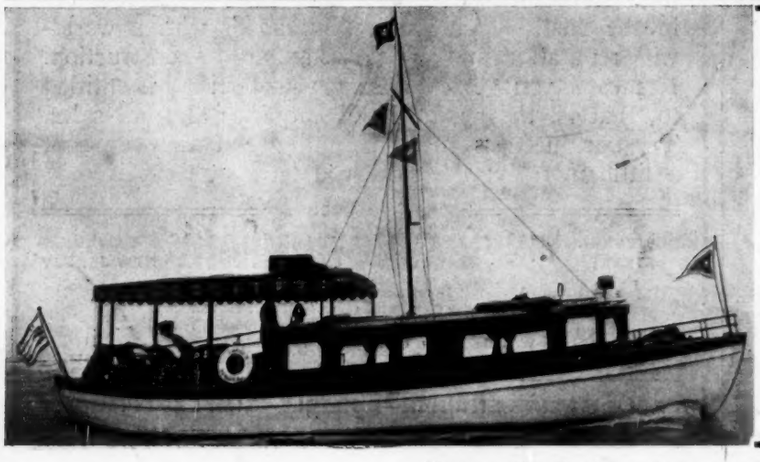

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